Drug Markets

May 1931

Established 1914

The Magazine of the Manufacturing Drug Trade

Editorials

Be It Known—Vitamins and Interim Revision—Duplicating Associations—Supreme Court to Hear Lee's Save the Baby—The U. S. P. and the Government—Production Hours—Watch Your Markets—Checking Counterfeits—Stabilize Values—Directing Drug Sales.

Feature Articles

Digestive Label Statements	435
The Combination Package	437
Meeting with the A. D. M. A.	440
When Bottles Are Washed	443
Sage	445
Drug Selling in Panama	447
Vitamin A and D Assay	449
Interim Revision for Vitamins	453
New Patents Reveal	455
The Literature Says	457
Therapeutics of Plantago Seeds	459
Strophanthus	461
Aromatic Compositions	465
American Perfumes	467
Grasse vs. French Colonies	469
Designing a Line for the Future	477
New and Non-Official	434
Ten Years Ago	434
Raw Material Markets	495
Drug Market Place	518
Buyer's Guide	420
Index to Advertisers	520

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Vitamins Again

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VOL. XXVIII — NUMBER 5

DRUG MARKETS, INC.
PUBLISHERS

Publication Office, 28 Renne Ave., Pittsfield, Mass. Editorial and General Office, 101 W. 31st St., N.Y. City

Editor
THOMAS R. FARRELL

Business Manager
FRAZER V. SINCLAIR

PUBLISHED MONTHLY AT PITTSFIELD, MASS., SUBSCRIPTION PRICE, TWO DOLLARS A YEAR, IN ADVANCE, POSTAGE PAID TO ALL COUNTRIES, THREE WEEKS' NOTICE IS REQUIRED TO CHANGE SUBSCRIBER'S ADDRESSES, AND WHEN NOTIFYING KINDLY GIVE BOTH OLD AND NEW ADDRESSES; PRINTED BY THE SUN PRINTING COMPANY, PITTSFIELD, MASS. ENTERED AS SECOND CLASS MATTER, JANUARY 1, 1928 AT THE POST OFFICE AT PITTSFIELD, MASS., UNDER THE ACT OF MARCH 3, 1879.

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D&O
ESTABLISHED IN 1798

ESSENTIAL OILS
and Kindred Products

YOUR SALES EFFORTS ARE

WASTED

if the flavor is not right.

Messina Essences of

W. SANDERSON & SONS

OIL LEMON

OIL ORANGE

OIL MANDARIN

have been the Standard all over the world for nearly a century.

We are also distributors for

Oil Lemon

Oil Orange

Oil Grapefruit

made by

CALIFORNIA FRUIT GROWERS EXCHANGE

We solicit orders for prompt and future shipments.

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180 Varick Street New York City

"The integrity of the house is reflected in the quality of its products."

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Buyers' Guide

RAW MATERIALS

ALCOHOLS

A. K. Hamilton
Stanco Distributors, Inc.
U. S. Industrial Alcohol Co.

AROMATIC CHEMICALS

Dodge & Olcott Company
P. R. Dreyer Inc.
Fritzsche Brothers, Inc.
Givaudan-Delawanna, Inc.
Magnus, Mabee & Reynard, Inc.
Newport Chemical Works, Inc.
Schering Corporation
Ungerer & Co.
van Ameringen-Haebler, Inc.

BEESWAX

Theodor Leonhard Wax Co., Inc.
Will & Baumer Candle Co., Inc.

BIOLOGICAL CHEMICALS

Wilson Laboratories

BORAX

American Potash & Chemical Corp.
Pacific Coast Borax Co.

COD LIVER OIL

H. J. Baker & Bro.
P. R. Dreyer Inc.
Geo. P. Huisking
Norwegian Cod Liver Oil Association

CRUDE DRUGS

J. L. Hopkins & Co.
Geo. P. Huisking
S. B. Penick & Company

DENTIFRICE BASES

H. J. Baker & Bro.
Industrial Chemical Sales Co., Inc.
John & E. Sturge, Ltd.
Swann Corporation

ESSENTIAL OILS

W. J. Bush & Co., Inc.
California Fruit Growers Exchange
Dodge & Olcott Company
P. R. Dreyer Inc.
Fritzsche Brothers, Inc.
Givaudan-Delawanna, Inc
Magnus, Mabee & Reynard, Inc.
Newport Chemical Works, Inc.
Plaimar, Ltd.
A. M. Todd Co.
Ungerer & Co.
van Ameringen-Haebler, Inc.

FLAVORING MATERIALS

California Fruit Growers Exchange
Dodge & Olcott Company
P. R. Dreyer Inc.
Fritzsche Brothers, Inc.
Magnus, Mabee & Reynard, Inc.
Ungerer & Co.
van Ameringen-Haebler, Inc.

GELATINES

Coignet Gelatines

GLYCERIN

H. J. Baker & Bro.
Colgate-Palmolive-Peet Co.
Harshaw Chemical Co.
Will & Baumer Candle Co., Inc.

GUMS

Geo. P. Huisking

MEDICINAL CHEMICALS

Abbott Laboratories
Benzol Products Co.
Dow Chemical Co.
R. W. Greeff & Co.
Harshaw Chemical Co.
Heyden Chemical Corp.
Hoffmann-LaRoche, Inc.
Mallinckrodt Chemical Works
Merck & Co., Inc.
Monsanto Chemical Works
Newport Chemical Works, Inc.
N. Y. Quinine & Chemical Works, Inc.
Chas. Pfizer & Co., Inc.
Schering Corporation
Swann Corporation

MINERAL OIL

M. W. Parsons Imports
Schliemann Companies, Inc.

SOAPS

J. L. Hopkins & Co.
Kranich Soap Co., Inc.
S. B. Penick & Co.
John Powell & Co., Inc.

VANILLIN

Fritzsche Bros., Inc.
Givaudan-Delawanna Inc.
Magnus, Mabee & Reynard, Inc.
Monsanto Chemical Works

CONTAINERS

ADHESIVES

Nat'l. Adhesives Corp.

BOTTLES

Maryland Glass Corp.
Owens-Illinois Glass Co.

COLLAPSIBLE TUBES

Art Tube Co.
New England Collapsible Tube Co.
Sun Tube Corp.
White Metal Mfg. Co.
A. H. Wirz, Inc.

CLOSURES

CORKS

Armstrong Cork Co.

INSIDE THREAD CAPS

Spring Stopper Co.

LINERS

Bond Mfg. Corp.
General Felt Products Inc.

METAL CAPS

Aluminum Seal Co.
Anchor Cap & Closure Corp.
Crown Cork & Seal Co.
Ferd. Gutmann & Co.
Phoenix Hermetic Co.

PLASTIC CAPS

Bakelite Corp.

MACHINERY & EQUIPMENT

FILLING MACHINES

Alsop Engineering Co.
Arthur Colton Co.
The Karl Kiefer Machine Co.
F. J. Stokes Machine Co.
Stokes & Smith Co.

LABELING EQUIPMENT

Economic Machinery Co.
O & J Labeling Machine Co.

MIXING EQUIPMENT

Alsop Engineering Co.
Arthur Colton Co.
Mixing Equipment Co., Inc.
F. J. Stokes Machine Co.

PACKING & CARTONING

Package Machinery Co.
Stokes & Smith Co.

PHARMACEUTICAL MACHINERY

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MUSIC

Delete its motif and the best melody ever composed becomes only a collection of meaningless sounds.

Likewise eliminate the proper Flavor and Odor from your product and it remains practically characterless---lacking identification.

MM&R basic Flavoring and Perfuming products are scientifically manufactured for specific uses and possess a reputation for strength and excellence. Consult the MM&R sales service department for new methods of improving your products.

Interesting Flavoring Materials

OIL LIMES IMITATION MM&R
OIL PEPPERMINT MOHAWK BRAND
IMITATION MAPLE CONCRETE MM&R
IMITATION RUM FLAVOR MM&R
STRAWBERRY AROMA MM&R
CHERRY AROMA MM&R
COCONUT FLAVOR MM&R
ORANGE BLEND MM&R
OIL SWEET ORANGE TERPENELESS MM&R

A Few Perfuming Products

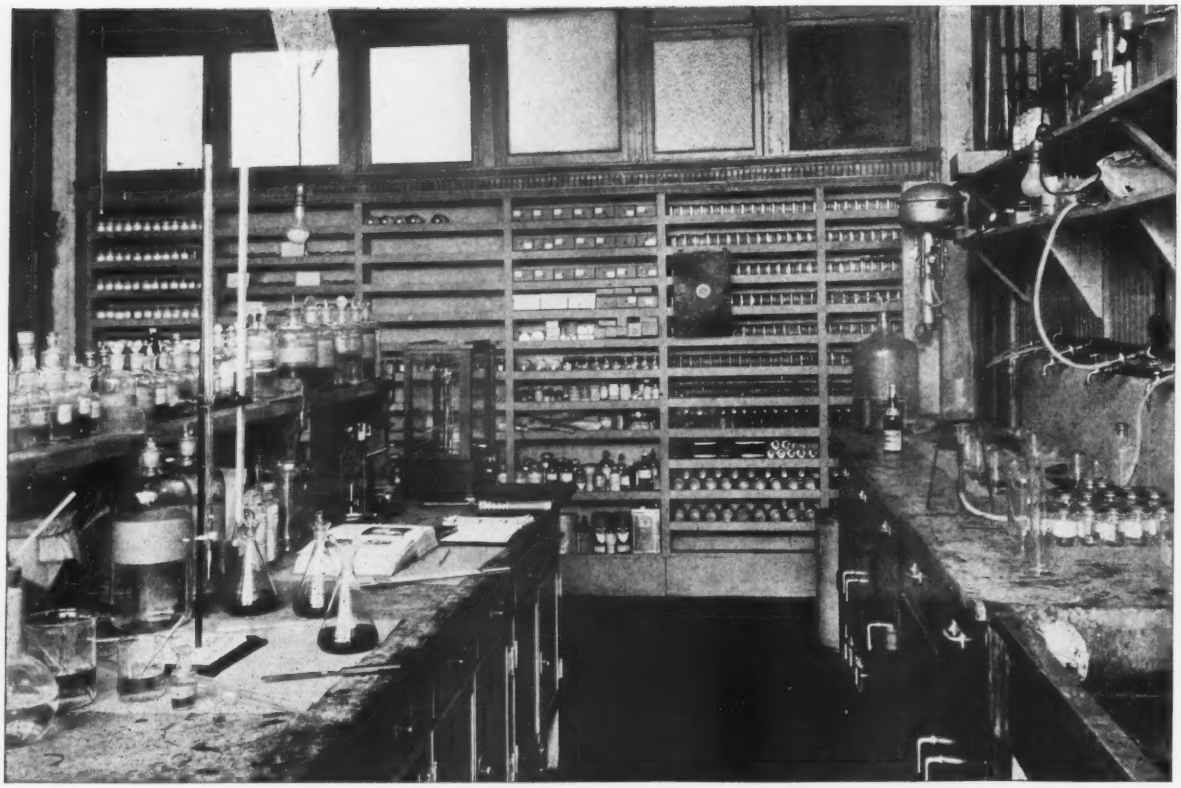
OIL BOUQUET B. L. S. MM&R
OIL CEDAR SPRAY PERFUME MM&R
OIL ROSE "N" MM&R
OIL SENSATION BOUQUET MM&R
ROSESOL MM&R
JERALE MM&R

MAGNUS, MABEE & REYNARD INC.

32 CLIFF STREET
NEW YORK, N. Y.

M M&R MAGNUS

29 SO. CLINTON STREET
CHICAGO, ILLINOIS



RESEARCH determines the Proper LINER

THE laboratory of General Felt Products, Inc., has been designed and equipped with one purpose in mind—to provide the finest facilities possible for advanced research in cap liners and the problems in sealing foods, medicinal and toilet preparations in relation to the cap liner.

The constant demand has been for a liner that would be more moisture proof, more resistant to alkali and acid, cleaner and more sanitary appearing. Prolonged research to develop a liner to meet these requirements has resulted in REZIZTOL.

REZIZTOL

To insure its usefulness, and its superiority in resistance to chemical reaction for a wide diversity of products, has meant many laboratory tests.

We now have a fund of data on REZIZTOL, which may prove specifically useful to you in sealing your product.

This data and the use of our laboratory for safely sealing your product are at your disposal.

General Felt Products Inc.

BUSH TERMINAL BROOKLYN, N.Y.

These Closures Add *New Beauty* to Your Package

CELLULOSE CAPS *can be used with all types of closures. Made in a wide range of colors, transparent and opaque.*

ARMSTRONG'S ARTMOLD CAPS *(left) are molded in standard and special designs. You can match them to the style of your package.*

ARMSTRONG'S EMBOSSED TOP CORKS *(below) are tailor-made closures combining corks with beautiful tops of embossed wood.*

THE need for beauty and smart design in packages is met by each of these three Armstrong Closures. Artmold Caps—a reigning favorite among package designers—breathe of quality, invest the bottle with an air of distinction. They are molded in shapes and colors that conform to the style of the package.

In Armstrong's Embossed Top Corks your own design is executed in a decorative top to which a cork is affixed. Beauty is combined with the safe seal of a cork.

The Armstrong Line also offers Cellulose Caps. Used with all types of closures, they give a finished, colorful touch to the bottle.

These decorative closures cost little more than ordinary seals. You don't have to slash your profits to beautify your package—and increase its salability.

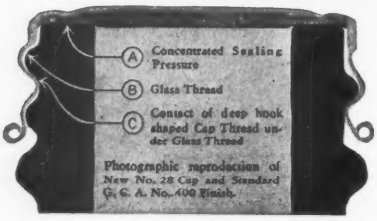
Samples and prices of Armstrong's Closures furnished on request. Or, better yet, send a sample bottle for suggestions. Armstrong Cork Company, 913 Arch Street, Lancaster, Pennsylvania.

Armstrong's Closures

CORKS OF ALL KINDS . . . ARTMOLD CAPS . . . EMBOSSED TOP CORKS . . . DAUBERS . . . CROWNS . . . CELLULOSE CAPS
CELLULOSE BEVERAGE BANDS . . . APPLICATORS OF ALL KINDS . . . RUBBER STOPPERS . . . CAP LINERS . . . BUNGS

A NEW AND BETTER SCREW CAP

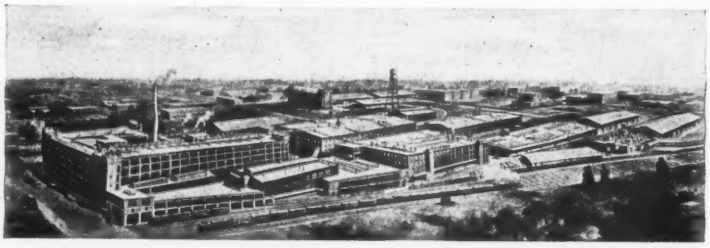
Here is the latest development in Crown Screw Caps —a closure that embodies new and exclusive features of far reaching importance in the sealing of glass


A Concentrated Sealing Pressure
B Glass Thread
C Contact of deep hook shaped Cap Thread under Glass Thread
Photographic reproduction of New No. 28 Cap and Standard C. C. A. No. 400 Finish.

packed products. Years of research and unlimited expenditures have gone into its development. Its introduction marks a new era in the use of this type of seal.

The sectional diagram shows the new deep threads of this improved Screw Cap. Note how they hug in under the glass threads, reducing friction and wedging pressure and giving more sealing pressure. This Screw Cap will not ride, lock or jam. The new sealing bead concentrates the down pressure on the liner and the glass sealing surface, while the new threading method preserves the decoration of the cap—bending instead of stretching the tinplate.

Look to "Sealing Headquarters" to provide you with the right closure for your product. This modern plant, the largest of its kind in the world, covers more than seventeen acres and houses not only the finest production equipment but also a wealth of experience and technical skill. The Research Laboratories are unsurpassed in the completeness of their equipment and in the service they can render you.



The skill and experience of our engineering department has brought this type of closure to its highest development. Correct design, combined with precision manufacture insures accurate fit and safe sealing, while the perfecting of special liners to meet the requirements of each and every product is a feature of the work of our Research Laboratories.

Write today for full information on the many advantages of this new and greatly improved Crown Screw Cap which offers superior sealing qualities at a lower price.

CROWN CORK & SEAL CO. BALTIMORE, MD.

▼ ▼ *World's Largest Makers of Bottle Caps and Closures for Glass Containers* ▼ ▼

ESTABLISHED 1849

PFIZER
ESTABLISHED 1849

STRICT CONTROL IS
ESSENTIAL IN THE
MANUFACTURE
OF

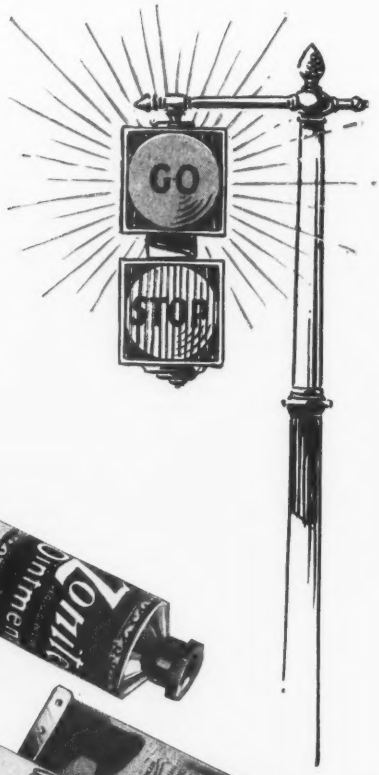
CITRIC ACID

WE HAVE
ESTABLISHED
A STANDARD FOR
QUALITY THAT IS UNEXCELLED

CHAS. PFIZER & CO. INC.
MANUFACTURING CHEMISTS
EST 1849
81 MAIDEN LANE
NEW YORK, N.Y.
444 W. GRAND AVE
CHICAGO, ILL.

82 YEARS EXPERIENCE

GREEN LIGHT on Distribution Highways— *for products in* WIRZ TUBES



Straight through, without delays, products in WIRZ Tubes reach the buying public . . . Jobbers, wholesalers, and retailers are quick to recognize the marketability of the convenience, the attractiveness and the sturdiness found in WIRZ Collapsible Tubes.

That probably accounts for the increasing number of manufacturers who are using Wirz Service—Design and Manufacture—to help speed up their distribution.

• • •

A complete line of Leak-proof Sprinkler Tops in gold, nickel and bakelite finishes

A. H. WIRZ, Inc.

ESTABLISHED 1856

Collapsible Tubes — Chester, Pennsylvania — *Metal Sprinkler Tops*

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30 East 42nd Street
Phone: MURray Hill 3447

CHICAGO
Railway Exchange Bldg., Jackson & Michigan
Phone: HARrison 3015-3016

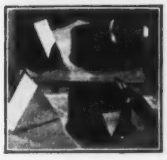
LOS ANGELES
1231 E. Seventh Street
Phone: TUCker 4150

Does the window dresser choose your package?

From the scores of packaged goods in drug store or beauty shop, does the window dresser choose your package to help build an alluring, sales inviting display? If it has an attractive, colorful Bakelite Molded closure, you may be certain that it will win preference over others that have an out-of-date look.

It is surprising how far a Bakelite Molded closure goes toward lifting a bottle or jar above the commonplace—toward giving it an air of individuality and quality. From the many colors available you may select one that will give your packages a distinctive character. Bakelite Molded also makes practical special designs that may be protected and remain your exclusive property.

In addition to superior appearance, Bakelite Molded closures have the further advantage of being very practical. Threads are molded with such uniform accuracy that closures turn on and off easily, but seal tightly. The material cannot corrode, and is not affected by the chemical content of beauty or other preparations. Why not consult our experts about the advantages of Bakelite Molded closures for your containers and have him show you some of the many kinds now in use.



BAKELITE CORPORATION
247 Park Avenue, New York, N.Y. Chicago Office: 635 W. 22nd Street
BAKELITE CORP. OF CANADA, LTD., 163 Dufferin St., Toronto, Ont.

BAKELITE

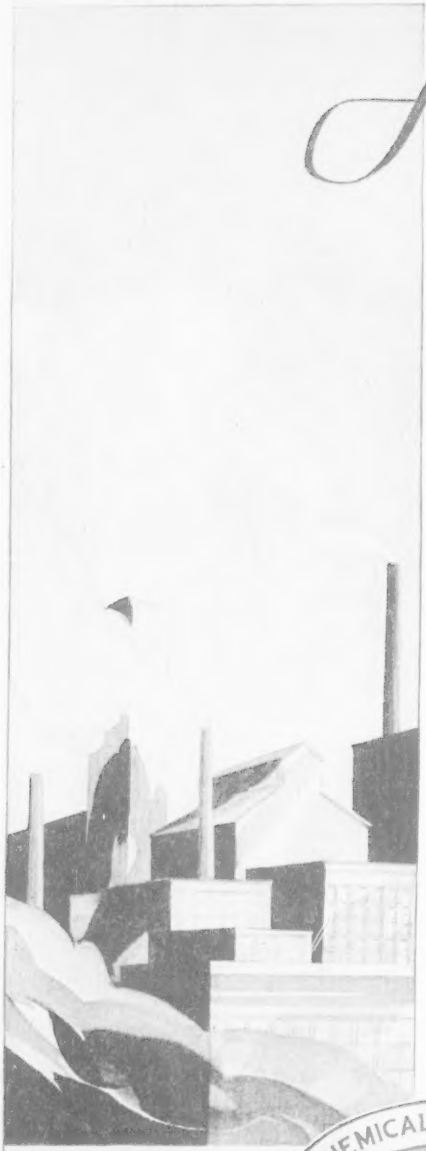
REGISTERED U. S. PAT. OFF.

The registered trade marks shown above distinguish materials manufactured by Bakelite Corporation. Under the capital "B" in the numerical sign for infinity, or unlimited quantity, it symbolizes the infinite number of present and future uses of Bakelite Corporation's products.

THE MATERIAL OF A THOUSAND USES

Monsanto Chemicals

for the Pharmaceutical » » » Manufacturer



- Acetanilid U. S. P.
- Acetphenetidin U. S. P. (Phenacetin)
- Antiseptics and Germicides (Dakin's Improved Products)
  - Chloramine U. S. P.
  - Dichloramine U. S. P.
  - Halazone
- Aspirin (Acetyl Salicylic Acid U. S. P.)
- Aspir-Gran (Free-flowing Aspirin)
- Caffeine
  - Caffeine U. S. P.
  - Caffeine U. S. P. Anhydrous Powder
  - Caffeine Citrated U. S. P.
- Carbolic Acid (Phenol U. S. P.)
- Chloral Hydrate U. S. P.
- Chloramine U. S. P.
- Chlorcosane U. S. P. (Chlorinated Paraffin)
- Glycerophosphoric Acid 25%
- Glycerophosphates
  - Acid Calcium 50%
  - Calcium U. S. P.
  - Sodium Pure Crystals N. F.
  - Sodium Pure Powder N. F.
  - Sodium Anhydrous Pure Powder
  - Sodium 75% Solution
  - Sodium 50% Solution
  - Potassium 75% Solution
  - Potassium 50% Solution
  - Iron Powder N. F.
  - Iron Scales N. F.
  - Magnesium
  - Manganese N. F.
- Phenol U. S. P. (Carbolic Acid)
- Phenolphthalein U. S. P.
- Saccharin Monsanto U. S. P.
  - Insoluble
  - Soluble Granular or Powder
- Salicylic Acid U. S. P.
- Salicylates
  - Acetyl Salicylic Acid U. S. P. (Aspirin) Powder
  - Acetyl Salicylic Acid U. S. P. (Aspirin) 10% Starch Granulation White, Pink or Green
  - Aspir-Gran—(Acetyl Salicylic Acid U. S. P. Granular)
  - Ammonium U. S. P.
  - Calcium
  - Lithium
  - Magnesium
  - Methyl Salicylate Monsanto U. S. P. (Oil of Wintergreen Synthetic)
  - Potassium
  - Salol U. S. P. (Phenyl Salicylate)
  - Sodium U. S. P.
  - Strontium U. S. P.

CHEMICALS OF QUALITY
Monsanto
ST. LOUIS, U.S.A.

A BACKGROUND OF 30 YEARS OF MANUFACTURING

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Victoria Station House, Victoria St.
LONDON, S. W. 1

Divisions:

Merrimac Chemical Co., Inc., Boston, Mass.
The Rubber Service Laboratories Co., Akron, Ohio
Graesser-Monsanto Chemical Works, Ltd., London, England

There are
CERTAIN PRODUCTS
people like to buy—

WHY do people prefer some products in place of others? QUALITY is a big factor, certainly. PRICE influences some. And ADVERTISING undoubtedly has its effect.

Yet, a surprisingly large number choose these articles—and hundreds of others—*because of the cap or closure* on the glass container!

True, it's only a little thing—the cap that seals your package—but it makes a tremendous difference. In the attractiveness of the entire package! In convenience! In the sure protection and perfect preservation of the contents!

Are you SURE of your packages? That they are sealed with the most suitable, attractive, economical and convenient-for-the-consumer closure obtainable? One which *aids* instead of handicaps sales? Which brings the product to the user exactly as it left your plant?

If you are not absolutely sure, it is wise to get full information. Anchor is an organization of closure specialists—making 15 distinct types of caps—in a complete range of sizes—for machine or hand application. Anchor can afford to be impartial—in recommending the type of closure *exactly* adapted for your requirements. Just write us, or send us a sample of your product.

Anchor Cap & Closure Corporation
22 Queens Street, Long Island City, N. Y.
Branch offices in all principal cities and in Canada

ANCHOR PRODUCTS

Anchor C Caps; Anchor D Caps; Anchor Amerseal Caps; Anchor Two-piece Amerseal Caps; Anchor Domed Amerseal Caps; Anchor Paragon Caps; Anchor Band Caps; Anchor A Clipper Caps; Anchor R Clipper Caps; Anchor Continuous Thread Bottle Caps; Anchor Continuous Thread Caps; Anchor Two-piece Continuous Thread Caps; Anchor DeepScrew Caps; Anchor Two-piece Deep Screw Caps; Anchor Molded Caps

Sealing Machines; Pressure Processing Systems

Anchor CONSUMER-APPROVED CLOSURES for every Packing Need

Will your product meet this final test?

Does the package in which your product is dressed "belong" in the surroundings in which it is used?

Only too often a really first-class preparation fails to retain consumer acceptance because the appearance of its package is not in keeping with today's standard of smartness.

A new line of bottles and glass containers about to be announced by Owens-Illinois serves as an admirable solution to this problem. Owens-Illinois Glass Co., Toledo, Ohio

OWENS-ILLINOIS

BOTTLES

AND

GLASS CONTAINERS

PACKAGING in accordance with the modern mode may result in increased sales of a product . . . for a while.

But after the novelty of the package has worn off . . . what then?

The consuming public is extremely fickle. Its fancy is easily turned from one package to another. And unless the manufacturer packs a product of exceptional merit, or the package has something else besides unique appearance, he may find himself right back where he started.

Of course many of the packages which we accept today as standard were at one time radical departures from the accepted standards of yesterday. The very foundation of American business rests upon change. True enough. But only good packaging endures to any marked extent.

Modernism for the sake of something new alone cannot be expected to last for long. The first attribute of a package (or anything else) should be utility. It should be of convenient size and shape. It should be easy to open. Then, if beauty (modern or otherwise) may be added at small increase in cost . . . why not?

The average consumer is curious enough to try any new product once. And isn't this as it should be? It keeps the established concerns humping to keep up with the new organizations and it permits anybody with a better product to win deserved consideration from the consuming public.

But the consumer is seldom fooled more than once. Any shape of container or style of label will identify inferiority with the same exactness that it will identify quality. The package that is radically different will only identify it more quickly.

Dart Smith

PHOENIX-HERMETIC COMPANY
Metal Caps for Glass Packages
CHICAGO NEW YORK

Offices: New York, Philadelphia, Boston, Rochester, Chicago, San Francisco, Los Angeles, Cleveland, Cincinnati, St. Louis
Plants: 2444 W. 16th St., Chicago; 14th Ave. and 38th St., Brooklyn

IT IS IMPROBABLE that anybody, either artist or inventor, will ever standardize style . . . or will even attempt to do so.

But materials and methods which form the structure of style may be, and have been, standardized in certain progressive industries.

And, much that was once left to guess or chance has been eliminated, or reduced to an infinitesimal fraction, without loss of individuality to the finished product.

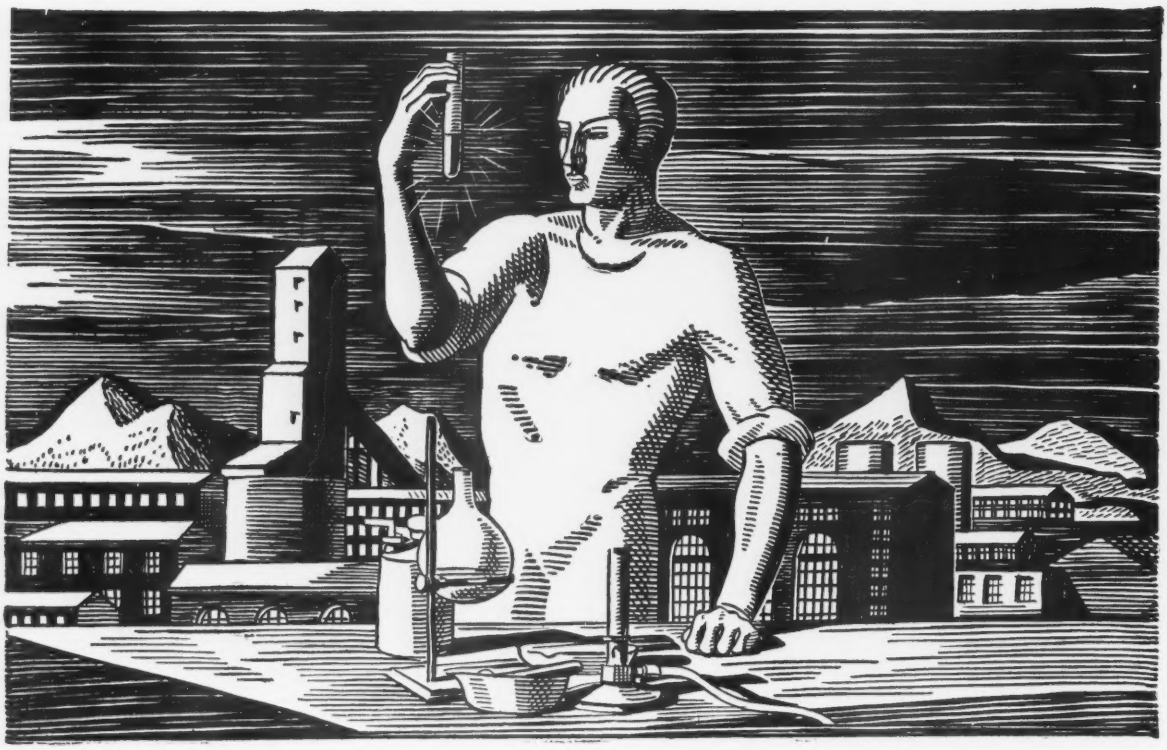
For example, in the decorating of metal the PHOENIX-HERMETIC COMPANY set out many years ago to establish definite formulae for metal coatings, lacquers, varnishes, inks and other decorating materials, as well as dependable methods of control in the application, drying and baking of these materials on metal.

While these materials and methods have long been used in the decorating of PHOENIX *Metal Caps* and users have benefited thereby, it is only within the last year that we have been able to publish in standard form the results of these years of work.

Now you may see, and have demonstrated to you, the exact colors, or combination of colors, which will be used in decorating your metal caps. Nothing is left to guess or chance. You order by number and the colors you order are the colors you get . . . no matter how often you have occasion to reorder.

The next time a PHOENIX Salesman calls (and he will cheerfully call upon request) ask him to show you his copy of Decorating Standards. In this volume you will readily see to what extremes we have gone to produce metal caps which are representative of the fine products they seal.

PHOENIX *Metal Caps*



. . . TO FIND A BETTER WAY

CREDIT the Chemist with the fact that in the past century we have progressed further and faster than in a thousand years before.

In his quiet laboratory the Chemist is guiding the development of industry, and upon his discoveries today will rise new industrial giants tomorrow.

As his dreams take form, new problems arise. He calls for raw materials with new properties. He calls for purer chemicals. He requires quantity production of rare and hitherto costly ingredients.

The Swann Corporation was created to help solve these problems. It is our job to serve the Chemist, stepping in with research and production facilities to find for Industry a new way, *a better way*, of making the necessary raw materials on a commercial scale.

' ' '

Swann Research has successfully served many leaders in American Industry. If your progress has been impeded by the lack of an ingredient with certain essential properties, perhaps Swann Research can help you to find a better way.

The many industries that use Abrasives are getting more work per pound of wheel because Swann Research pioneered Cubical Shape Grain and Accurate Sizing.

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THE SELLING POWER OF COLOR AND DESIGN

Art . . . powerful color . . . striking design . . . to spot your product at the point of sale and impress it upon the buyer's mind so he will look for it again.

America's leading makers of toilet preparations have found that their quest for better tubes ends here.

Suggestions that may make your product still more attractive . . . are yours for the asking.

NEW ENGLAND COLLAPSIBLE TUBE COMPANY

17-35 Waller St., New London, Conn.
3132-34 S. Canal St., Chicago, Ill.
New York Office: 370 Lexington Ave., (Cor. 41st St.)

NEW ENGLAND COLLAPSIBLE TUBES

MERCURY

Stood Between Tannery Workers and Deadly Disease

WHEN the foot and mouth disease swept the country some years ago, killing cattle by the thousands and threatening human life, the tannery worker's life was imperiled. No quarantine however rigid could quite exclude infected hides. It was then that the chemist once again proved his value. In Mercury he found protection to workers without injury to hides. Thus still another industry was added to the growing multitude of users of mercury compounds.

For forty-three years the Mallinckrodt Chemical Works have given special attention to the development of a line of mercurials—about fifty-eight in all—unsurpassed in purity, uniformity, and efficiency. There are yet many industries that may find use for such compounds. Perhaps in your business one or more may prove valuable. If our long experience may be helpful to you, feel free to consult us.—*Mallinckrodt Chemical Works, St. Louis, Missouri.*

58 ***Mercurials prepared by Mallinckrodt, include:***

Mercury Ammoniated
Corrosive Sublimate
Calomel (Very Fine)
Mercury Oxide (Red and Yellow)

Mallinckrodt

FINE CHEMICALS

St. Louis
Philadelphia

New York
Montreal

Drug Markets

Vol. XXVIII MAY 1931 No. 5

Be It Known

THE drug manufacturing industry is not given to self praise. Rather is the industry too serious minded and too engrossed with things which appear more important to take sufficient time aside to consider the value of such educational work. Yet we believe there is nothing more important to the industry than the education of the public as to the ideals and purposes which guide the leaders of this industry. Nothing should be allowed to stand in the way of impressing the medical profession and the public with the fact that competition among the leaders of the drug industry is not met with attempts to lower quality and prices, but rather with attempts to improve the quality above competitors or to develop special products which constitute forward steps in medical science.

RECENT quarrels with the Food and Drug Administration's attitude on methods of manufacture of official preparations have submerged the true ideals of the leaders of the drug manufacturing industry. Rather has there been an attempt to prove that the commercial side of drug manufacturing has resulted in a general trend on the part of manufacturers to skate close to and sometimes dip below the official standards as a means of meeting competition and showing adequate profit. The fact that the leaders of industry more often than not are attempting to raise the standards of their products above the mere average standard of the U. S. P. is not generally known. Very few not closely associated with the industry appreciate that the more progressive manufacturers regard the U. S. P. as a book of average standards to be bettered where possible and permissible by the better than average houses.

THE results of the research of manufacturers must obtain wide publicity. It is not for the best interests of the industry to have the public avidly read the announcement of physicians of a famous clinic, of a new and highly useful product, when in truth these physicians are only conducting the necessary clinical work so that the manufacturer can offer his discovery to the medical profession as a means of improving public health conditions.

Vitamins and Interim Revision It is interesting to note the extent to which the Pharmacopoeia Revision Committee is going in its attempt to develop new standards and methods of testing vitamin products for U. S. P. XI. Not only will be the best brains on the subject in this country be drawn upon whether they are members of the Revision Committee or not, but also the best brains of Europe on the subject of vitamins will be consulted.

It is equally interesting to note the extent to which representatives of manufacturers or of manufacturers' associations are consulted in this matter. The list of experts that comprise the auxiliary committee to the Revision Committee is heavily loaded with such men. This speaks well for the type of scientific men whom drug manufacturers employ, and clearly stresses the free rein that manufacturers give these men when employed on scientific problems.

Vitamin assay is a costly process. The maintenance of assay laboratories, and the engagement of scientists qualified to conduct assays and to keep abreast of the latest developments is expensive. There is little doubt that this is one of the reasons why the manufacturers' representatives are foremost in this work.

But perhaps the most interesting phase of the forthcoming revision of vitamin standards is the announcement that these standards will be adopted as an interim revision without waiting for the publication of U. S. P. XI. Here we have an instance of the Revision Committee awakening to the utter ruin that a period of less than ten years has brought to standards which when drafted appeared to be the best that could be done. It is a welcome sign to see the Revision Committee taking advantage of the right of interim revision.

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Duplicating Associations Again the time of the meeting of the A. D. M. A. and the A. P. M. A. draws heavily on the large numbers of manufacturers who are members of both associations. This year greater inconvenience is caused by the closer proximity of the two meetings. The question continues to be asked, why have two associations representing the ethical phase of drug manufacturing? Perhaps before long the impossibility of answering this question will bring about a consolidation of the two to the benefit of all concerned.

Supreme Court to Hear Lee's Save the Baby There are signs that the drug manufacturing industry will in the near future know its rights with respect to the labelling activities of the Food and Drug Administration. It is reported that the Food and Drug Administration will be able to appeal the case of Lee's Save the Baby to the U. S. Supreme Court for final decision. It will be remembered that this case involved the labeling of a product labeled with the names of diseases for which preparations containing the same ingredients as the product itself were ordinarily prescribed.

This is a clear cut case of whether or not a manufacturer can label products in accordance with the mitigation phase of the Food and Drug Act. Merely because there is no specific cure for a disease, the Administration claims that those things which are ordinarily used by the physician to relieve the disease, or to aid nature in overcoming the disease, can not bear the names of these diseases on the labels.

A decision favorable to the drug trade in this case by the U. S. Supreme Court would settle once and for all this question and would bring new life back to a sorely tried industry.

• • •

The U. S. P. and the Government It has been called to our attention that there is a possibility of misinterpreting the head and subhead which appeared in our April issue upon the interview with Dr. James J. Durrett, Chief of Drug Control, Food and Drug Administration, regarding the Government's attitude toward the Pharmacopoeia.

We hasten to explain that it was with no intention of misrepresentation of Dr. Durrett's remarks that the head or subhead were written. We did not mean to infer that the conclusions drawn in the subhead had been stated in that manner by Dr. Durrett himself. Rather had we attempted to indicate to both the U. S. P. Revision Committee and the drug manufacturers the true relationship between the Government and the Pharmacopoeia as we saw it from Dr. Durrett's statements.

If we have caused any embarrassment to the Food and Drug Administration or to others concerned, we apologize and ask those who read the article to disregard the head and subhead and attempt to draw their own conclusions from the article itself, to which, we believe, no objection has made been.

Production Hours Comparative production costs are difficult to determine in pharmaceutical houses manufacturing a large number of items. Often, however, drug and cosmetic manufacturers do have large volume items on which production costs can be definitely determined. On these items the experience of one of the leading drug manufacturers of the country is particularly informative since this company took advantage of the depressed conditions to close their plant all day Saturday at the same time guaranteeing to their employes continued employment.

On the items on which this company is able to determine its costs in an accurate manner, it was found that the reduction of nine per cent in working hours reduced production for the week by only one and one-half per cent. In other words, production for the balance of the period was speeded up by seven and one-half per cent. While it might be assuming too much for an outsider not acquainted with the facts, it would not appear to be an impossible task for this manufacturer to gain back the remaining one and one-half per cent. in production and thereby lose nothing by the reduction in working hours.

The manufacturer states that it will never go back to Saturday morning employment, and hastens to explain that probably the largest single factor in producing the satisfactory result was the assurance given to the men that no one would be dismissed no matter how rapidly production was speeded up or how far business declined. This experience is just another indication of how business is headed for things which at first glance appear to create additional expense, but which upon further investigation prove to be extremely profitable.

• • •

Watch Your Markets Signs are more apparent now than they were a month ago that those buyers who expect weak markets for raw materials to remain weak merely because there is an over-supply will miss their guess in many instances. We are at present acquainted with the movement of a certain product into firm hands although this product was apparently in hopeless oversupply and was selling at a price below at least any price quoted for the past thirty years.

Manufacturers who have a constant use for many of the raw materials which are today selling at ridiculous prices will do well not to take the statistical position too seriously. A comparatively small sum of money will work wonders in advancing a great many of these markets today, and once the market advances, the latent demand suddenly becomes active.

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Checking Counterfeits Counterfeiting of drug trade products remains one of the problems about which manufacturers feel utterly helpless. In dealing with this evil manufacturers are up against an entirely new group of individuals of whose methods little is known. In delving further into the problem, makers are met with all sort of demands for money to obtain information, and more often than not, the expenditure of money in this manner is only chasing good money after bad.

We wish to call attention to one method of preventing counterfeiting referred to in the Plant Manager's Column in this issue. Further than this we have in mind a plan for complete protection against counterfeiting that goes further than a mere protection by identification. We shall explain this plan in detail to those interested before such time as we make a general announcement some time hence.

• • •

Stabilize Values Although the present low level of stock market values has doubtless caused a recession in the business recovery, the values in the stock market are affected by so many extraneous matters that they are never a clear indication of the basic condition. The policy of pricing certain stocks on their earnings for a single year, and of pricing still others on an enormous surplus that the stockholders are expected to receive some day—heavens knows how—are just two of the factors which cause stock market levels to give an incorrect impression.

Deflation or recession in values can not go on indefinitely. It is a fact that we are more than a year and one-half and closer to the recovery. It is also a fact that when confidence is established in values at any level, then conditions will improve in a real way.

• • •

Just because manufacturers object to price maintenance legislation after the manner of Capper, et al does not mean that they are interested in the welfare of the independent retailer or that they do not appreciate their duty to him. Some day, perhaps, a method will be found that is workable and equitable to all and when it is found the manufacturers will probably fight tooth and nail to have it adopted. The only thing to fear is that when the time arrives, the retailers might not trust the manufacturers.

Directing Drug Sales

Cross currents of sales efforts in the drug manufacturing industry leave no end of unsolved problems to the sales director of a progressive house. Whether to cultivate the wholesaler, or to disregard him and create a demand which will force him to handle the products; whether to cultivate the retailer, the public, the doctor, the dentist; how to apportion the discounts; what to do when a wholesaler or a retailer undersells the manufacturer's price to the physician or the hospital, are problems that probably will remain unsolved as long as the drug business is what it is.

Unfortunately practically every drug manufacturing house has a different impression of the value of the various aids to distribution. There are those who care nothing for the wholesaler; there are many who can not see the advantage of dealing with retailers direct; there are those who have no reason to cultivate the physicians; there are others who place all their sales efforts within the doctors' offices; there are many who see the great advantage of using a direct consumer educational campaign; and there are those who believe that other means can be used more reasonably to produce the same result.

The result of all this muddle is complete confusion for the sales manager who is attempting to steer a straight direct course. He must of necessity keep his sales costs at a minimum, but still he must increase his volume in comparison with his competitors. How to direct such a sales campaign is a problem that presses for a direct answer—but there is no answer.

{ Ten Years Ago }

From Our pages, May, 1921

S. B. Penick & Co. have moved to the fifth floor of 115 Fulton Street.

W. J. Bush & Co. have removed from 100 William st. to 370 7th Ave.

E. K. Speiden, secretary of Innis, Speiden & Co., has resigned.

Richard J. Prentiss, formerly associated with J. L. Hopkins & Co., is now connected with William Benkert & Co., 136 Water st.

The Lambert Pharmacal Co., St. Louis, has brought suit in the St. Louis Circuit Court to restrain the Lambert Chemical Co. from using the name of Lambert in its title.

Among new incoprorations was the Ivers-Lee Co., Newark, N. J., from $2,500,000 to $4,500,000.

Milton Campbell, president of H. K. Mulford Co., Philadelphia, has been elected treasurer of the Philadelphia College of Pharmacy

• • • New and Non-Official • • •

• • •

Another Result of the Depression ?

We now pack our shaving cream with three girls instead of six.—Excerpt from a certain manufacturer's advertising copy. This seems to us like a darn good premium and our only regret is that we didn't know about it before.

• • •

There's Something in That

As a friend of ours in the alcohol business remarked recently, one good thing about selling apples is that you can take your inventory home with you. If you consider the source, that's quite a significant statement.

• • •

As Others See Us

A favorite messenger boy contributes this impression of an essential oil house—a couple of guys walking around in their nightgowns, sniffing at pieces of paper.

• • •

Perfumes and Steel

When we read that Coty stockholders had objected to an item of $233,000 salary for Mr. Levy and that they had been over-ruled, we fairly glowed with pride. We guess that will show Charlie Schwab that he's not the only one!

• • •

Was Barnum Right ?

In connection with the Empire State Building, Frigidaire advertises that, "Frigidaire coolers were selected exclusively only after exhaustive engineering tests had proved conclusively that Frigidaire alone maintained the high standard for excellence demanded by architects, builders and engineers."

Of course the fact that General Motors and the Empire State have interlocking directorates had nothing to do with it.

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A Man on a Boy's Errand

It was extremely important that the plant manager of a certain essential oil house have the company's ten-ton truck for picking up a few drums of material which he needed that day. He started early that morning to call the city warehouse but the truck had already left, no one knew where or why. Near the end of the day, too late to do him any good, he finally got in communication with the driver who had returned to the city warehouse. In answer to his exasperated questioning, the driver reported that he had been delivering a two-ounce vial of oil to an uptown cosmetic house.

• • •

Ethics in Business

There was a checking over of salaries in a firm well known in our trade. One salary, quite a good one, appeared on the books for over four years. But there was no sign or record of the man who drew the salary.

The treasurer was questioned. "Well, there's no use looking for him. You see, he died four years ago, an old employee—and we've continued paying his salary to his widow."

That was all. But it shows, among other things, why so many buyers just won't be pried loose from this company.

Digestive Label Statements

Drug Control gives its opinion of what is right and what is wrong.

WHILE there are a large number of preparations, and a wide variety of them, intended by manufacturers to be for digestive purposes, or for the treatment of indigestion, the labeling of therapeutic claims on them should be very carefully done. This conclusion is reached after a talk with Dr. J. J. Durrett, Chief of Drug Control, at the Department of Agriculture. No longer may preparations be labeled generally for treatment of indigestion or dyspepsia, in all forms, without qualification. Nor may they be labeled to promote or to aid the digestion of anything and everything.

"There are not very many preparations offered for sale as aids to digestion," said Dr. Durrett. "Pepsin preparations and pepsin compounds constitute one class of such goods. Nearly all preparations offered to aid digestion contain either pepsin or diastase. The former helps in the digestion of protein, if given in the right quantity and in an acid medium."

"It is not proper to label a pepsin preparation or product as aiding or promoting digestion in general. It would be proper, however, to claim that a pepsin preparation 'promotes the digestion of proteins in the stomach,' provided the proper dosage were specified.

"Some digestive preparations are believed to work best in an alkali medium. Diastase has been claimed to be helpful in the digestion of starches. It acts very well in the test tube. But it doesn't act so well in the human body. It must have a proper medium, which is practically a neutral medium. The proper dose must be stated in any event, of course."

Dr. Durrett's attention was next directed to the large class of preparations offered for treatment or cure of indigestion in one form or another. He admitted that there are many preparations of alkaline character.

"They are nothing in the world but preparations to neutralize acidity in the stomach," said he, "or for the treatment of hyperacidity. That is all they do, as a general rule. Some may have laxative qualities; others not. That is the extent of their efficacy. Many of these preparations are largely made up of alkaline ingredients, such as magnesium oxide, calcium carbonate, bicarbonate of soda, and the like.

"Such preparations can not properly be labeled as cures or treatments for indigestion," continued Dr. Durrett. "They may properly be labeled as antacids or as alkaline preparations, or they may be labeled to 'neutralize excess acid in the stomach,' provided that is what they do in the dosage prescribed."

Dr. Durrett went on to say that such preparations should not be labeled as good for sick stomach or for nausea.

"They wont stop nausea unless it is from acidity," said he. "An alkali would not necessarily stop nausea."

"Sick stomach might come from half a dozen different causes, and an alkali preparation could not be depended upon to remedy all such conditions. Overeating will cause hyperacidity.

"If alkali preparations are taken indiscriminately by persons not afflicted with hyperacidity, they might make the contents of the stomach alkaline in character. That is not desirable."

Dr. Durrett was asked about such articles as peppermint, etc., which many persons take for indigestion or to assist digestion.

"Peppermint, spearmint, and other mints and menthol are carminative and sedative in their action," he replied. "A few drops of chloroform has a like effect. Preparations of these articles may be labeled as carminative and sedative, but not as remedies for indigestion. Various volatile oils such as oil of clove, cinnamon or anise, belong in the same general class of goods."

There is another class of preparations for the stomach, which Dr. Durrett designated as bitter stomachics. These promote the flow of the gastric juices. Dr. Durrett mentioned such things as tincture of nux vomica, strychnine, and quinine, which he called bitter tonics and appetizers. There are others, such as gentian and quassia, which he classed as bitter stomachics, but not tonics. These things may be labeled as "stomachic."

As understood in trade circles, this word means a medicine which promotes functional activities of the stomach. And as the trade understands it, the name may be applied to anything that has that effect.

Again, the trade idea is that if a preparation will aid in the digestion of food there is no reason for not labeling it as such. The description "digestive tonic" is approved by trade authorities, as applied to a preparation, if it in fact acts in that manner. Prevention or cure of indigestion however, is "something else again," and represents a much broader field to be considered in the labeling of preparations for stomach treatment.

Some preparations may be considered as good in treating stomach ache or pain due to indigestion in one form or another, but such preparations are classed officially as anodynes, as are preparations for treatment of pain elsewhere in the body. It is held that they should not be labeled as aids to digestion or as remedies for i n d i g e s t i o n, nor should the word "stomach" or "digestion," or "indigestion," be used on a label for anodyne.

There are things such as capsicum and ginger, which are regarded as having a stimulating affect upon the stomach. But it is not believed that these should be labeled as for treatment of indigestion.

The Food and Drug Administration has made no campaign especially on the labeling of digestive preparations or on medicines claimed to be for treatment or cure of indigestion. Department officials are understood to have felt that these classes of preparations are perhaps less important, in connection with the federal effort to bring about the changing of labels to meet the official idea and to stop what Administration people regard as the defrauding of the public, than are various other classes of preparations that have been made the subjects of definite projects or campaigns.

This does not mean that the Department is indifferent as regards digestive preparations. Quite the contrary! Dr. Durrett declares that all drug manufacturers should observe the law as to the makeup and labeling of all of their preparations. But it is pointed out that departmental activities in enforcing the food and drug law are necessarily limited, by the men and funds available.

The Department attacks preparations claimed to be for digestion or for indigestion occasionally, according as complaint may be made to the Department or as official inspectors pick up samples of such preparations. These samples are subject to analysis and examination and test by the Food and Drug Administration before any action is taken. Then, if the facts are believed to warrant, the product concerned is seized. In some cases, as with other classes of medicinal products, manufacturers are warned and are given opportunity to change their labels or their formulas to make the product and the labeled claims for it come into accord, as the Department considers it.

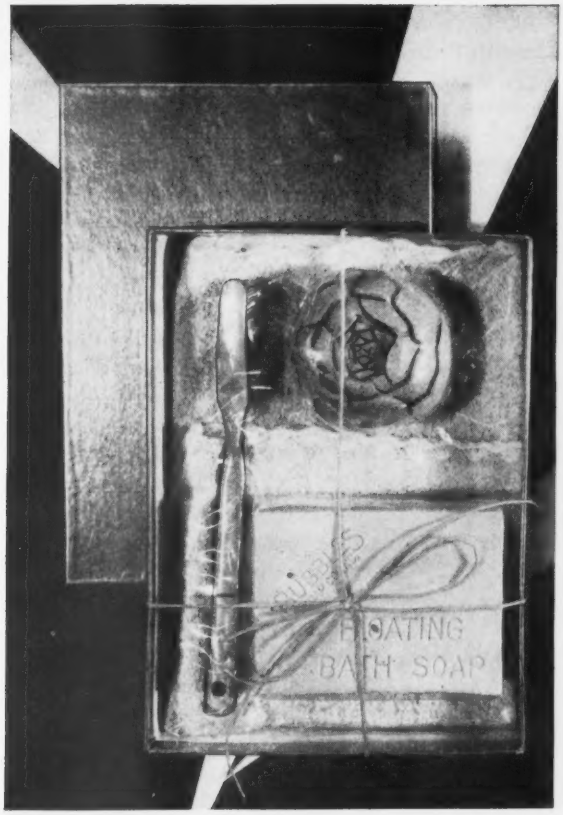
In one recent case quantities of two products for relief of dyspepsia were seized and ultimately the manufacturer decided not to contest the case, with the result that the goods were subjected to a decree of condemnation, forfeiture and destruction. One of the products involved was a liquid preparation consisting essentially, according to the Department, of extracts of plant drugs including berberis and glycyrrhiza, glycerin, alcohol and water. The other was a tablet containing bismuth subnitrate, sugars, a trace of ginger, and peppermint oil.

The products were labeled for the relief of stomach troubles, dyspepsia, indigestion, waterbrash, dilation and catarrh of the stomach, stomach disorders, distress after eating, returning of food into the mouth, gnawing at pit of stomach, coated tongue, headache, dizziness, and so on. Misbranding was charged by the Department, which said that these claims were "false and fradulent, since the article contained no ingredient or combination of ingredients capable of producing the effects claimed."

Facts About Avertin

It has been found that when avertin is used to produce a basic narcosis and then ether is used to prolong the condition during the course of the operation, the results are not so satisfactory as when avertin is administered through the rectum. A modification of the use of avertin has been devised by Kirschner and this has been found to give good results in 150 cases up to the present time. Kirschner injects the drug intravenously in the form of an infusion. The drug is absorbed in this state and it is possible of course to stop the administration of the drug at any time. Just sufficient of the drug to produce narcosis can be administrated under these conditions. Inasmuch as the patient loses consciousness within forty seconds under these conditions and a so-called avertin intoxication is attained in this manner. This lasts only three to six minutes. The patient wakes up after ten minutes and at times after only five minutes. He is able to rise and move about without assistance.

Some interesting literature on the subject is as follows: Eichholtz, Deutsche med. Wochenschrift, 1927, pages 710ff; Straub, Deutsche med. Wochenschrift, 1928, pages 1279ff; Loewe, Klin. Wochenschrift, 1928, pages 1848ff; Nordmann, Ther. Gegenw., 1929, pages 442ff; Kirschner, Der Chirurg, 1929, number 15.



A typical combination package

The Combination Package

Nationally advertised goods of different manufacturers aid each other in making sales.

BACK in 1921, The Lever Bros. Company took what was an advanced step for the times when Lux advertising used copy furnished by prominent fabric manufacturers. This idea of merchandising cooperation between two different companies was extended in 1922 by the Pepsodent Company which, in answering requests for samples of its toothpaste, sent out a folder which told the consumer about the Decoater toothbrush whose makers used the same sales points for that product that the Pepsodent company used for its toothpaste.

These two instances of two or more products promoted together may not be the first on record, but they are among the earliest attempts of prominent manufacturers to capitalize each other's national trade and consumer prestige. The underlying thought in the plan of these concerns to ally their merchandise was that soap and fabric, toothpaste and toothbrush, are products which go together in the consumer mind and that, by telling of one while selling the other, each producer would get double advantage—capitalizing on his own good-will and that of his associates, too.

During the past ten years, manufacturers in the drug field have worked out many extensions of the basic idea of allying two or more closely associated products. Into window displays the allied-item plan has gone, with the best of results for manufacturers whose merchandise alone might not warrant an entire window to itself, and now there is evidence of an opportunity for two or more nationally prominent manufacturers to put their merchandise into the same package. Already experiments have been made, and what has been done indicates that the idea is being given considerable thought, that alliance of merchandise of national note holds promise for a new step in toilet goods packaging.

Before describing actual packages in which two or more advertised items of similar type are presented to the trade and sold to the consumer, let us present briefly the steps leading up to this latest development.

"For many years the idea of related sales has been held prominently before the retail clerk," explains Donald S. Cowling, director of sales of Lucien LeLong, Inc., in concisely summing up package changes as seen in the toilet goods field. "But because of the fact that for every well-trained clerk who will intelligently go about the business of increasing sales through related items there are a hundred who say mechanically, 'And what else ?', alert manufacturers took steps to simplify to the last possible degree the potential sale of more than one item.

"From 'week-end' boxes, which were small pasteboard cartons containing replicas in miniature of the regular jars of cream, bottles of lotions, and boxes of cosmetics and powder, they went ahead to 'travel boxes', which are cases holding anywhere from three to a dozen of the preparations of the particular house represented. Certain other houses brought out a 'guest room package' which displayed in a row six or seven different cakes of compact powder, each of a different shade.

"In our own company we have advocated the sale of a package which contains all four of our perfumes, on the basis of a woman's changing her perfume as she changes gowns—to meet the occasion. The logic is sound and we find buyers ready to accept the idea. We devised a package in the shape of a Maltese cross, holding in each of the arms one of the four Lucien LeLong fragrances. The package was finished in the modern manner and priced as units at the price of the four bottles of perfume added together. The general idea was so much in harmony with the accepted trend that we found a ready market for the package."

Such multiple unit packages and containers are offshoots of the original demonstrator idea, and their logic and practicability has been sufficiently impressed upon the minds of consumers so that allied items today will be unhesitatingly accepted even though the same manufacturer does not make all the merchandise in the package. Mr. Cowling gives the following examples:

A large toothbrush manufacturer not long ago launched, at its annual dealer convention, a combination package of a toothbrush and a tube of toothpaste which he had made up under his own name for that package. A manufacturer of shaving cream bound with every carton of cream a bottle of after-shaving lotion. Another bound with his cream a can of talc in a special tint for men. The leading perfume and cosmetic manufacturer of the industry some time ago packed a small vial of perfume with every box of face powder. While Carl Weeks reports success in selling a package of Kleenex with a jar of Armand Cleansing Cream. Two such allied products sometimes are bound together with a strip of imprinted adhesive paper, and sometimes they are packed together in a special carton.

To date three successful methods have been used to ally nationally known merchandise in the same package. The first is to use the combination to sample the products. The Colgate-Palmolive-Gillette offer of 35-cent shaving soap and dollar razor to sell as a 35-cent unit is a graphic example of this use of allied, advertised brands.

Eleven million Gillette razors were bought by the Colgate-Palmolive-Peet Company and, as Felix Lowy, vice-president said in an interview, the company put on what may be termed a glorified sampling campaign designed to induce millions of men to try, for the first time, Palmolive, Colgate and Gillette products—which for years they have been reading about in advertising.

Another somewhat similar alliance between well-known producers was that of Yardley and Cannon. Yardley & Co. and Cannon Mills arranged to place a small packet of Lavender in sets of Cannon Lavenlawn sheets and also in an ensemble package of towels, face cloths and bath mat. From this tie-up, Cannon obtained the advantages of an effective Lavender odor to correspond to the name of the product and of a prominent name allied to its own. Yardley, plus the tie-up with a nationally advertised trade name, got widespread sampling benefits. The same tie-up was extended to another Cannon type sheet and another Yardley odor.

The second method of packaging two or more allied products is for one manufacturer to put several products of a smiilar nature together under his own name and use only his own prestige. The Bubbles Soap Company, for example, imports a floating bath soap. Appreciating the difficulties of selling soap alone against the tremendous competition in drug and department stores, this concern designed a package which includes an unbranded face cloth and a toothbrush. Covered with glazed paper, this package makes an effective display and also makes an attractive gift package whose market can be extended under the Bubbles company name in the gift shop field as well as in drug and department stores.

Similarly—and chiefly during the holiday seasons—many other manufacturers have worked out allied

products packages under their individual imprint. One of these packages, bearing the name of the producer of Baby Gays (Q-Tips they sometimes are called), contains in addition to the Baby Gays a tube of baby cream, a bar of baby soap, a package of borax crystals, a package of safety pins, and a can of baby powder.

Talking this type of allied package over with the American Hard Rubber Company, the point was brought out that the manufacturer whose name is carried on such combination packages loses the double effect which can be obtained from adding known brands. Even though he prefers to handle the package entirely as his own, he would get greater effect by capitalizing other prominent, advertised names.

A candy manufacturer has taken care of this angle very neatly by combining with a box of his Apollo chocolates a new novel by a well-known author and identical with the volumes sold in book stores at standard prices. Calling this the Package-of-the-Month, he gets the benefits of a good publishers' advertising while being free to pick what book he wishes. While A. Stein & Company of Chicago puts out for department store distribution a small package of its own rubber baby pants, some safety pins, and a can of the well advertised Johnson & Johnson baby powder. And the Kleinert Rubber Company in its own kits has included at one time or another ZBT powder and Miss O'Day's baby shoes. Thus the manufacturer whose name is on the package gets a certain additional benefit from the name of the other manufacturer whose merchandise is included in the alliance.

But it is in the third method of working out allied-item packages that the latest progressive step is made in packaging—the combining of both product and merchandising ideas. In this plan, whereby each manufacturer makes use of the other's advertising and distribution to his own advantage, the basic merit lies in the fact that each is free to go on with his regular advertising and promotion without thought of the other except as he can make good use of the other's efforts and prestige.

Helena Rubinstein and the Onyx hosiery company last spring got together on such an arrangement, in their case the starting tie-up being a sampling connection, for into boxes of Onyx hosiery were put sachets of Rubinstein face powder. From this initial combination packaging, however, the plan branched out effectively, because the face powder and the hosiery had been matched as to color harmony.

Having styled the two products together, the two companies proceeded to advertise each other's merchandise. In Onyx national consumer advertisements, Mme. Rubenstein was quoted as authority for hosiery shades named similarly to her powders. And in Rubenstein powder advertising, matching Onyx hosiery was played up.

Then, in merchandising, each of the concerns again got double effects. For Onyx in selling to its outlets presented the tie-up between the hosiery and toilet goods departments of the store, while Rubenstein salespeople did the same. In the first instance, the powder manufacturer gained outlets which she might not have had before, with sales increased accordingly. In the second case, Onyx had its hosiery story explained to dealers who otherwise would not have taken so great an interest in the line. Then, after a store had stocked both products under the plan, clerks in each department referred customers to the allied merchandise in the other section.

Each of these companies paid its own advertising and promotion bills, and each got the benefits of the other's cooperative selling efforts.

Another example of this latest step in allied-item packaging is that of the Lou'ray Company, manufacturers of bath salts. Believing that packages of allied merchandise of national prominence will help one product sell another just as window displays of allied products make the products mutually helpful, F. R. Shepard, president of the Lou'ray Company has designed bath salt packages to capitalize fully the prestige and sales power of items allied to bath salts.

"At the present moment," he says, "we are working with the manufacturers of Beetleware to make up a package of our salts and their glasses. If they decide not to go in with us under their brand name, we shall not make up the allied package with their goods. Because we have found that consumers would rather buy two names they know than buy one known and one unknown brand. And we also want the entree into new outlets which these manufacturers could provide.

"Appreciating that in the drug store field there is no apparent limit to the variety of allied packages which can be made up, we have been looking very far afield and have considered allying our product with items which at first glance would not seem at all allied. To combine bath salts with such articles as bath brushes, thermometers, wash cloths, soap, and rubber sponges under such names as Bakelite and Kleinert is not startling. But when I say that we have been talking with the makers of Reddy Tees about making up an allied package to carry this well-known, branded golf accessory and our nationally known Lou'ray bath salts together, you can appreciate how valuable we think the idea of allied packaging can be when two manufacturers with prestige combine to make fullest joint use of their individual ideas, promotion, and sales outlets."—

Dr. Wilhelm Haarman, member of the firm of Haarman & Reimer, manufacturer of aromatic products, Holzminden, Germany, died March 6. He was eighty-six years old, and founded the aromatics house in 1874.

Meeting With the A. D. M. A.

Nicholas H. Noyes, of Eli Lilly & Company, heads the Association as president after many years of activity

A. Homer Smith, President of the aggressive Sharp & Dohme, is the First Vice-president

Dr. Arthur C. Boyleston, General Manager of Mallinckrodt Chemical Works, advances to Second Vice-president

Dr. John F. Anderson, Second Vice-president of E. R. Squibb & Sons, becomes Third Vice-president of the Association

WITH its usual large attendance of prominent scientists in attendance the opening scientific section meetings of the American Drug Manufacturers' Association annual meeting started four days of discussion of problems of all phases of the manufacturing pharmaceutical business, at the Cavalier Hotel, Virginia Beach, Va.

Under the chairmanship of Paul S. Pittenger, the first session had its light this year, as last year, in the report of the sub-committee on Vitamin Assay of Cod Liver Oil. Dr. Arthur D. Holmes, chairman of the sub-committee, gave the report of the work to date, and stated that the committee recommended a change in minimum vitamin content to 400 vitamin A, and 100 vitamin D. After much interesting but harmonious discussion, Dr. Holmes was given the approval of the association to represent the members of the association in the meeting of sub-committee of the U. S. P. XI, which held its meeting in New York, May 8, and which is reported elsewhere in this issue.

Several of the scientific sub-committees were unable to report any progress in routine work to the association as the members of these committees have been busily engaged in work on the forthcoming U.S.P. XI.

Dr. David Klein reported further results in the study of the stabilization of rennin and trypsin. He further reported that a study of bile salts is now under way.

The drug extracts committee was authorized to undertake a study of corpus luteum. The committee reported that a one to three powdered extract of digitalis appeared to be more practicable than the usual one to four product of this type.

Hydrogen-ion concentration now being determined in different laboratories with results that compare very favorably. This will now lead to further co-operative work on the pH values of various pharmaceuticals.

Special work on ergot and digitalis are being undertaken by two sub-committees, although it is believed that the completion of the work will not be arrived at for several years.

The general sessions opened on Wednesday with the reception of delegates of other associations, among whom were: Dr. H. Sheridan Baketel, president, American Pharmaceutical Manufacturers' Association; Dr. E. L. Newcomb, secretary, National Wholesale Druggists Association. Dr. James M. Doran, Commissioner of Industrial Alcohol expressed his appreciation of the co-operation that the members of the association had given his department in the reorganization of the enforecement of the permissive phase of prohibition regulation.

Retiring President S. Barkesdale Penick stressed the point that the drug manufacturing business was in a fortunate position in that it had not suffered as sharp a business decline as had most other industries. Mr. Penick commented upon the Senate investigation into the enforcement of the Food and Drug Act which occurred last summer, which investigation, he said, had laid at rest the charges that the enforcement officials were lax in their duty in protecting the quality of drug products. He commented on the strong revision committee now preparing U. S. P. XI.

The case of Lee's Save the Baby came in for special attention in the report of Horace W. Bigelow, chairman of the committee on legislation and general counsel of the association. Mr. Bigelow quoted from the decision of the judge who decided in favor of the manufacturer in the suit by the Food and Drug Administration to have the labeling of the preparation declared fradulent.

Said Mr. Bigelow:

"For some time the Government has been in doubt, owing to legal complications, as to whether or not an appeal could be made from this decision. Recent developments, however, indicate that the Government will be able to appeal. The principals laid down in this decision are contrary to policies now pursued by the Government and the Government has unequivocally announced that it would continue to follow its present procedure until the U. S. Supreme Court has definitely decided the matter. It would be very desirable to have the case finally and definitely decided by the highest court to the end that the industry would definitely know its rights."

With reference to legislation in West Virginia requiring manufacturers outside the state to obtain permits to sell certain extracts, medicinals, and toilet articles containing alcohol, etc., in West Virginia, Mr. Bigelow said:

"Several of our members have contributed to the expense of the litigation in West Virginia, sponsored by the Balitmore Drug Exchange the purpose of which was to test the validity of the West Virginia law requiring manufacturers located outside of the State to obtain permit to sell certain extracts, medicinals, and toilet articles containing alcohol, etc., in West Virginia. The suit was instituted on December 24, 1930, in the District Court for the Southern District of West Virginia, in the name of McCormick & Company, Inc., and Durham Brothers Company, Inc., and upon filing the Bill a temporary restraining order was forthwith entered by the Court and the case came up for argument on the preliminary, and, by consent, the permanent injunction on January 12, 1931. On January 16th the Court refused their permanent injunction and dissolved the order which temporarily restrained the Commissioner of Prohibition of West Virginia from requiring permits from manufacturers located outside of the State. Thereupon, an appeal was taken to the Circuit Court of Appeals for the Fourth Circuit at Richmond. This appeal may settle the matter finally or may be preliminary to a final appeal to the Supreme Court of the United States. The issue in the case is whether extracts, medicinals and toilet articles manufactured in accordance with formulae approved under the

Some of those attending A. D. M. A. meeting

National Prohibition Act and unfit for beverage purposes are intoxicating liquors within the meaning of the Webb-Kenyon Act, the Eighteenth Amendment and the National Prohibition Act, or any of them, and so deprived of their character as legitimate articles of trade and protection under the commerce clause of the Constitution of the United States. If these articles are intoxicating liquors, then the State of West Virginia has the right to license and restrict their sale, but if they are not intoxicating liquors, then the State of West Virginia has no right to lay any burden upon traffic in them. Of course, no one can say what will be the result of the appeal but confidence has been expressed that the case is in position for a fair correct determination by the Court."

Carson P. Frailey, Executive Vice-president and Secretary of the association, included in his address several instances of state bills that were detrimental to the interests of the industry, most of which died in committee. He reviewed the steps taken to make the Williamson Bill effective for reorganized control of alcohol supplies.

The committee reports read at the first general session were full of most valuable information.

Ray A. Whidden, president of Bauer & Black, stated in report on employment problems that the industry as a whole was maintaining a higher percentage of normal employment than other industries. Many manufacturers have been able to keep their full staffs of regular employes at full pay, this being accomplished in some instances by shortening the working hours.

E. H. Ravenscroft, in his report on insurance discussed the newer ideas in workmen's compensation insurance and the agitation to establish unemployment insurance. He urged that the efforts to increase taxes by placing the government in the business of insuring employment be carefully watched.

The report of Ralph R. Patch on Patents and Trade Marks called attention to the harm that is being done by the application of the present law to chemicals. The law permits of patents covering whole groups of products of a certain type even though only a few of the chemicals of the group may be known to the inventor or to anyone else. This prevents research and development taking place in a very large number of chemicals which might prove useful if they were made. Thus the law, which is intended to stimulate development, is working in the opposite direction. He pointed out that a process patent might relieve this situation, but then protection against infringement would be impossible without an inspector being placed in the plant of every manufacturer making the particular product.

The Sales and Advertising Committee again held forth on the last day, and again provided an exceptionally instructive program.

Dr. Frank B. Kirby opened the session with a discussion of the dentist as a pharmaceutical prospect. It was Dr. Kirby's opinion that while the use of official pharmaceuticals by the dentist is small, the recommendation of a product by a dentist is very valuable in promoting sales of a specialty. There are four methods by which the dentist can aid in the sale of drug products: First, by dispensing at the chair; second, prescribing; third, dispensing; fourth, recommending. The fourth of these is by far the most valuable as has been proven by the history of many products that have grown to fame in large part by its contact with the dental profession. Dispensing at the chair, prescribing, and dispensing are of minor importance except in the case of very few outstanding products of especial value to the dentist such as Novocaine

Promiscuous sampling of ethical products to doctors was attacked by A. M. Hayes who told of the common practice of salesmen leaving samples for physicians even when they did not get in to see the physicians. He also attacked the practice of salesmen giving large amounts of samples to physicians as a means of gaining the friendship of the physicians. He questioned the wisdom of continually supplying the same physicians with samples of tablets that the physician used in office to the complete ignorance of the one taking the tablets. He also attacked many other phases of the sampling practice.

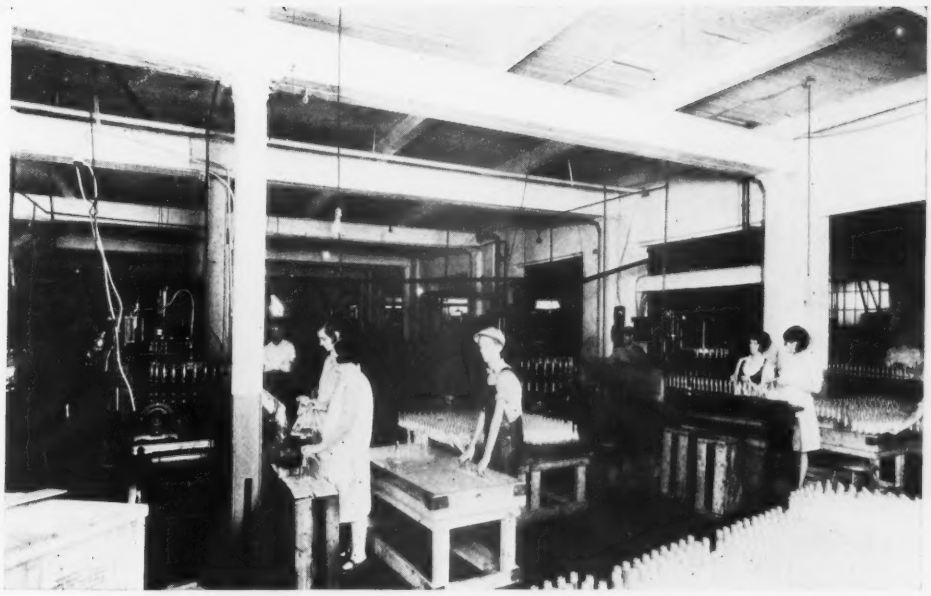
Thurston Merrell discussed the various angles of controlling salesmen's expense accounts, giving his opinion that the best method is to include expenses in the salary and bonus compensation on a plan arrived at in accordance with the type of products being sold.

Walter Lee Rosenberger told of the small amount of business that could be developed in selling drug products to industrial plants. He told of the efforts of his firm to develop such business in and around Philadelphia with the result that it would be much better for the manufacturers to leave this business alone and send the accounts to retail druggists in the neighborhood. He told of being called on the phone and told that the factory in question was buying right along, and then being told to be sure and deliver two 100 bottles of aspirin tablets surely by the next morning.

Selling pharmaceuticals to hospitals was discussed by George Braun who developed by means of charts some very interesting facts regarding the hospitals of the country. He advocated the creation of a special package containing products in dispensing units rather than in bulk so that the patients themselves would become definitely acquainted with the product in question.

Means of determining compensation for salesmen on jobber purchases were discussed in a paper prepared by Turner Currens. Mr. Currens' firm allows no compensation for the goods bought by jobbers

(Continued on page 446)



When Bottles Are Washed

Why and how bottles should be washed are outlined in this article.

BOTTLE washing is necessary not only as a means of eliminating foreign elements which would endanger the health of the consumer, but also as an economic factor in preventing spoilage with consequent financial loss. After all, the cost of a washing machine is a low rate of insurance against claims for damage or business lost through careless handling.

It is surprising what is found in supposedly clean containers after a storage period. Such things as soil particles, dust, coal dust, soot, cinders, paper, grease, wood, glass particles, metals, lint, and even nails. Insects are very commonly found, to say nothing of microflora and dust in the air resulting in possible transmission.

Recent examinations of containers from various plants, both manufacturing and packing, disclosed the presence of both bacteria and mold. The bacteria were more abundant than molds. The most common types of the former encountered were cocci, sporulating aerobes, and antinomyces. The fungi were largely various species of penicillium, mucor, aspergillus, and others. Yeasts were also abundant.*

Unfortunately, there is no definite legislation covering the washing of new containers. The very crude methods used by packers to clean the containers would, if known, cause some hesitation among prospective buyers. A common method resorted to by bottlers is to blow air mechanically into the bottles to force out dust and dirt. This may work in some instances, but there are a number of conditions which would not be effected by this treatment. Oil films, film caused by weathering, both tend to prevent thorough cleaning by holding heavy particles against the wall of the container. These can be released only by proper use of a detergent and necessary rinsing with water. Some firms use nothing but a dry brush, and after a short time this brush puts more dirt into the container than it takes out. The inadequateness of

*Tin cans and glass jars as bacterial contaminants in canned foods by C. R. Fellers.

these methods is readily appreciated, especially when it results in litigation over injuries caused perhaps by the presence of some harmful abrasive. The publicity given, for example, to an incident where a customer receives a severe cut when applying a face cream in which occurs a particle of metal or glass is naturally detrimental to the product's sales.

The storage place is another factor which would seem to emphasize the necessity of proper cleaning. Open fields or sheds, dusty lofts, are some of the ordinary storage places. With so little protection it is no wonder the containers become harbors for all types of foreign material carried by the wind or rain.

Since the drug industry uses new bottles which in many cases are packed directly from the bottle making lehr into sealed corrugated cases, the mechanical washing problem is not as difficult as in those industries which have to rewash used bottles. The use of alkali and prepared waters does not call for specially designed equipment, other than that it must be constructed of such materials as will withstand corrosion. At the present time most of the standard washing machines are designed to be connected to the regular water lines. It is, however, a very simple matter to connect them to a wash-water tank on a floor above, in order to provide an adequate quantity of treated water. The alkali and detergent mixture can be prepared in any large sized tank, situated preferably high above the washing machine, in order to provide sufficient pressure and to save pumping. Where large quantities of bottles are washed and would, therefore, require an enormous amount of wash water, it can be filtered and repumped back into the main storage tank.

There are, however, machines known as bottle soakers which provide means for carrying the empties through the alkali solution. Such soakers work automatically and deliver the bottles to a rinser, so that it is never necessary to have the operator place his hands into the solution. When standard equipment is used for handling alkali wash, the piping should be so arranged as to permit the flushing of the bottles with a clear, pure water, after they have been washed with the prepared solution. It is obvious, of course, that the bottles must be rinsed after washing in order to eliminate the loosened foreign matter and all traces of the solution.

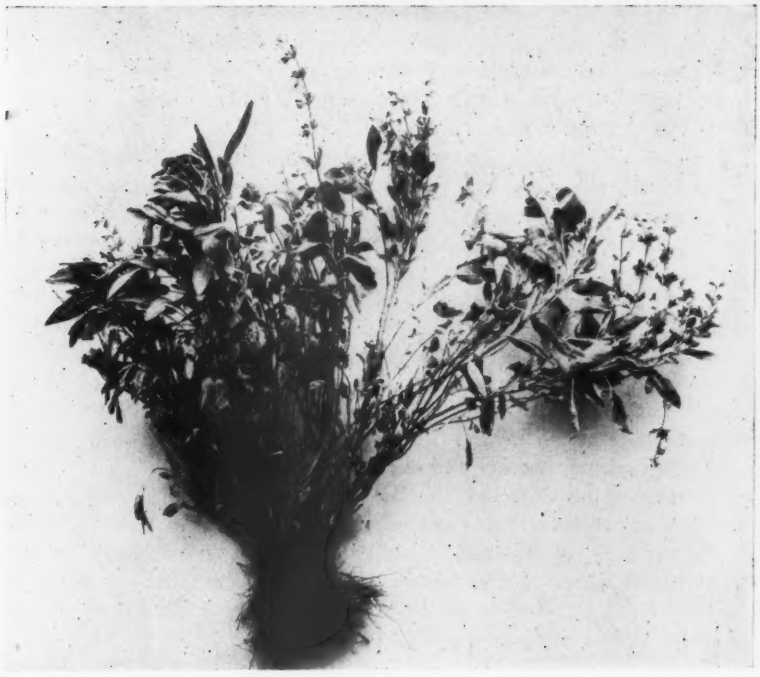
In the case of a chemical preparation, one of its constituents may be powerful enough to render micro-organisms harmless. However, carefully formulated solutions are sometimes effected by caustics or alkalies left in the bottles by careless rinsing. Too, some products such as cough syrups may be spoiled by micro-organisms remaining in the containers.

Where bottles are used more than once, such as for citrate of magnesia, definite sterilization should be given the container. In line with this subject, Chicago's Commissioner of Health appointed a committee to make recommendations for proper bottle sterilization, who reported as follows:

1—Machine alkali (a) Minimum proportion of caustic alkali to soda ash, 2 to 1; (b) use minimum charge (1.5 pounds per cubic foot water); (c) make solution twelve hours before use, to allow mixing; (d) minimum alkali reckoned as NaOH (sodium hydrate) always to equal, or exceed 1 per cent. (10 grams per litre) clean machine out thoroughly at least once a week.

2—Wash and Rinse Water (a) Water supply must be safe; (b) water must have sufficient pressure to effect complete rinsing, no alkali left in bottles; (c) spiral rinsing stream suggested as more effective than direct stream.

(Continued on page 486)



Salvia Officinalis, commonly known as Sage

Sage

EVERYONE knows the sage, used as it is in the kitchen, by the perfumer and the pharmacist. *Salvia officinalis* L. is the botanical designation, and the word sage comes from the latin *salvare*, to save, which fact makes it easy to understand how the ancients felt toward this plant. The sage for them represented the panacea for nearly all ills, and it was supposed to be endowed with many healing properties. Still used, the sage has, however, lost some of its former glory, and today it is no longer the sacred herb it was centuries ago. In fact, it was held strange by some of the ancients that man could be mortal with such a wonderful plant as the sage growing in his garden. And in the Provence section of France it is said that one has no need for a doctor if there sage is grown in the garden.

The sage is a labiate, and grows wild in the dry, calcareous sections of Southern France, usually near thyme, rosemary, and aspic, or spike lavender. It is a very hardy plant, and is tufted. Flowers from May to July, (sometimes into August and September, particularly near Paris), and the blossoms are quite large, violet, sometimes pink, or white.

There are two kinds of sage, the so-called large and the small. The leaves of the large variety are bigger than those of the smaller variety, found so frequently in Provence.

The *salvia officinalis* is, according to Rolet, frequently replaced, in gardens, by a species that resenbles the *offcinalis*, originating in Crete (*salvia cretica*), which is more vigorous even than the former, with branches that are more rigid.

Sage is cultivated in the Vaucluse, Loire, Seine, Seine-et-Oise, Aisne, etc., departments of France, although a great deal of the sage comes from Italy. It prefers light, warm, calcareous soils, and is multiplied by means of seeds, cuttings, etc. The seeds are practically spherical, and a dark brown, or blackish brown. A gram contains approximately 250 seeds, and a liter of them weighs 550 grams. They have the faculty of allowing conservation for three or more years.

Sowing is done in the springtime, and cuttings are made in the nursery March or November. After planting, great care is taken to keep the plants well irrigated, until the time that they show the desired

life and vigor. During the growing period the usual care is given the sage, which consists in careful weeding above all. In the autumn the French grower uses farm manure, and in the springtime, during the first plowing or dressing chemical fertilizers.

Although it is possible to conserve a sage plantation for more than ten years, it is thought best in France to renew a plantation every two or three years, in order to secure the best results. After three years, it has been found that the yield, especially from the distilling perfumer's point of view, gradually diminishes.

Harvests consist either of the leaves themselves (before the flowering), or of the flowering tops of the plants. On large plantations it is possible to secure three cuttings per year, the first capable of giving 1,500 kilograms per hectare, the second as much, with the third showing a decline that depends upon the particular season involved. On small plantations only one cutting, as a rule, toward the end of June. In the Paris district this cutting time is frequently shifted to the last of August, due to the climatic conditions in the Paris region.

Essential oil of sage (Fouquet) is a yellow liquid; density at plus 30°: 0.895 to 0.902; solubility: troubled solution even in pure alcohol. Quite naturally, there, various kinds of sage, with the result that the density given by different authorities vary greatly, but that indicated by Fouquet may be considered as an average among the various figures cited by chemists who have examined specimens of oil of sage.

The essential oil obtained from the dried plants is different from that secured when distilling the freshly cut sage, and the density is, of course, much less.

Essential oil of sage is produced in a number of countries, including Spain, Italy, Dalamatia, Germany and France. It enters into the composition of *salvol*, antiseptic, microbicide, insecticide, and contains, among other things, phenols (eugenol, thymol, carvacrol); aldehydes (citronellal, citral); eucalyptol; eudesmol; borneol; camphor; etc.

Flowers taken from the first yield, in July, usually, are richer in oil than those of the second yield, in September, the latter being, as a rule, dried for the herborists.

Although the importance of the sage from a pharmaceutical point of view has diminished, it does, however, still play a role, and many kilograms of the plant are dried for the herborists in countries like France.

The carefully chosen, quality leaves of the sage for the trade are picked, as a rule, before the flowering season, in June-July. Drying is done in the shade, away from the sun. The entire plant, after being dried, will be found to have lost more than half its weight. Ten kilograms of fresh leaves are reduced to two kilograms 200 grams through the drying process, applied by the growers in France.

Many families in France still use the leaves and flowered tops of the sage to make up popular, home remedies. The sage is said to be stomachic, tonic, and a stimulant for the nervous system. Drying does not cause the plant to lose its aromatic odor, its warm savor, piquant and slightly bitter. These qualities seem to draw to the sage many users among the simple country folk of France and other European countries.

In France one prepares from the sage a certain wine, a tincture, infusions for lotions, baths, fumigations. An infusion of 10 grams of flowered tops per liter is given by Rolet as being advisable in cases of gastric troubles.

Sage is used to flavor certain wines, giving them the taste of muscat, and in certain alcoholic drinks in the liqueur category.

Its use by the housewife is, of course, too well known to bear any detailed mention here.

Meeting with the A. D. M. A.

(*Continued from page 442*)

although he admitted that this did not seem right. He was of the belief that no satisfactory arrangement had been arrived at for the solution of this problem.

R. M. Cain told of the work of sales supervision, including the preliminary salesman's training, the direction of salesmen in the territory and the district supervisors. He told of going into the field as a salesman and thereby finding things that should be corrected. He told of the proper support being given to salesmen by means of statistical data and other information that will help the salesmen, rather than the older method of hounding them to develop more business.

A surprising amount of information on radio and moving picture advertising was gathered by Donald Merrell. He gave facts and figures on the available broadcasting media, and stated that radio had its place in an advertising program although not to the exclusion of other media such as the newspapers and the magazines.

A paper, "What Research Has Done for the Doctor" was prepared by Dr. Roger L. Adams, University of Illinois, and was read by the secretary. This paper told of the large majority of medicinal chemicals that have been developed by research chemists working under the direction of manufacturers, as opposed to the amount of products developed by the physicians themselves.

Nicholas H. Noyes, Eli Lilly & Company was elected president for the coming year. Other officers elected are: A. Homer Smith, Sharp & Dohme, First Vice-president; Dr. Arthur C. Boyleston, Mallinckrodt Chemical Works, Second Vice-president; Dr. John F. Anderson, E. R. Squibb & Sons, Third Vice-president. Other members of the Executive Committee are: O. W. Smith, Parke, Davis & Company; J. H. Foy, Maltbie Chemical Company; R. Lincoln McNeil, Robert McNeil; S. Barkesdale Penick, S. B. Penick & Company. Carson P. Frailey continues as Executive Vice-president and Secretary, and Horace W. Bigelow continues as General Counsel.

Drug Selling in Panama

IN THE cities of Panama and Colon—*where drainage etc. is carefully supervised*—intended by Canal Zone authorities—the prevailing diseases are principally tuberculosis, pneumonia, syphilis and those common in this country, but in the interior districts of the Republic, malaria and other *fevers, as well as hookworm are prevalent. As a result* there is considerable call for quinine and quinine products, specifics for bowel complaints, and preventive medicines for venereal diseases.

The fact that there is no domestic production of *medicinal or pharmaceutical products, or toilet preparations,* makes this an open import market, as all the needs of the populace must be supplied from outside sources. The purchasing power of the mass of the population is however low, and the per-capita consumption of prepared medicines comparatively small.

Prepared medicines in the Panama official statistics are classified as "Patent medicines, liquid and other" and comparative imports under this classification for recent years are as follows:

	1922	*1923*	*1924*	*1928*	*1929*
Total imports.....	168,684	186,005	167,149	269,249	259,641
United States.....	$132,795	$129,087	$130,497	$177,638	$216,432
France.....	23,201	36,649	21,304	15,207	11,696
United Kingdom....	6,387	9,123	6,084	7,660	10,366

A very large proportion of the proprietary medicines imported into Panama are American goods, and this trade is continuously increasing.

In perfumery and cosmetics our standing is not so satisfactory. With a total importation in 1928 of $276,417 and in 1929 of $341,639, France exported $177,638 in the former year against our $66,312, while in 1929 the figures for France were $226,978, against our $77,575.

In the soap line, Panama's total imports were $151,870 in 1928 and $214,616 in 1929. Here again we were leaders with $125,213 in the former year, against the

A beautiful palm-lined street in Cristobal

United Kingdom—our nearest competitor,—which exported only $16,587 in that year. In 1929 we shipped soap to the value of $137,812 against the United Kingdom's $14,444.

In Panama prepared medicines, as well as toilet requisites, are almost entirely imported by wholesale drug houses. These, in turn, distribute to the retail drug stores and ship to the interior. Considering the limited market, manufacturers have not found it necessary to arrange for the manufacture or packing of their goods in Panama, to avoid import duties, especially as these are not sufficiently high to affect the trade, and all merchants are on a similar basis.

Full details of products imported from the United States during 1929 are given in the following table:

Coal tar medicinals	$1,874
Quinine sulphate and other cinchona salts	3,314
Milk of Magnesia	8,777
Castor oil	2,298
Cod-liver oil	3,791
White mineral oil	2,829
Biologics, for animal and vetenary use	1,993
" for human use	21,096
" glandular products	10,116
Veterinary preparations	467
Medicinal and chemical preparations-dentists	142
Medicinals for external use, plasters	2,069
" liniments	4,770
" salves and ointments	25,035
" Tinctures	1,314
" other, for external use	36,440
Tonics (blood purifiers, appetizers, digestives, eliminatives	84,392
Fluid extract cascara	234
Other fluid extracts	1,940
Powdered extracts	45
Cough and bronchial preparations	8,220
Other medicinals for internal use	147,065
Other non-coaltar medicinals and pharmaceutical preparations	12,482
Household insecticides, exterminators etc. liquid	21,035
Household insecticides, powdered or paste	4,350
Disinfectants, deodorants, germicides, antiseptics and similar preparations	5,824
Petroleum jelly	13,238
Perfumery and toilet waters	10,261
Dental creams	66,287
Other dentifrices	6,240
Talcum	22,449
Face powder	2,751
Compacts	1,188
Bath and other powders	876
Cold creams	7,836
Vanishing and other creams	7,318
Rouges, lipsticks and other cosmetics	5,899
Other toilet preparations	55,502

Goods for Panama are generally purchased by wholesale drug merchants on three to four months credit. They, in turn, allow 30 days to local druggists in cities and 60 to 90 days to firms in the interior.

Owing to the excessive heat and moisture during the rainy season, which lasts from May to December, bottles are preferred as containers, and if tins are used they must be hermetically sealed. Labels in both English and Spanish are preferable, with English on one side and Spanish on the other.

The U. S. P. is official in Panama, and trade-marks must be registered. There are no special restrictions regarding importations of proprietary medicines, if they do not contain narcotics. There is a general import tariff of 15 per cent. ad valorem, but aerated waters, elixirs and patent medicated wines have to pay 25 per cent.

Most of the well known brands of American and European medicines are found in Panamanian stores, and there seems to be no prejudice against those of any country. In recent years French and German preparations have been gaining ground, but apparently this has not greatly affected the importation of American good.

Undoubtedly sales can be increased by intelligent advertising, and while the distributions of free samples, and use of car signs, bill boards etc. have not proved valuable in the past, it is possible that an intensive campaign might result in increased sales. The most useful advertising mediums are newspapers, which are published in Panama City and circulate throughout the Republic. They are printed in Spanish.

Considerable interest has arisen recently in the use of veterinary preparations in the Panama area. It is estimated that there are about 300,000 head of cattle, and 40,000 horses and mules in Panama. Until recently development of the livestock industry has been largely confined to cattle and swine, but cattle raisers are now giving some attention to raising horses and mules. Many of the cattle are sold to the Canal Zone, which is a live market.

No veterinary medicines or animal dips are manufactured in Panama and while no statistics are available showing the consumption of veterinary preparations, a reliable estimate shows consumption of about 50,000 to 60,000 cubic centimeters of anti-hog cholera serum, and about 5,000 or more blackleg tabloids annually.

The prevailing animal diseases are anthrax, blackleg, diarrhea, ticks, tick fever, screw-worm, poultry cholera and hog cholera. About 60 per cent. of the cattle are owned by small ranchers, and these men know little about methods of prevention or cure. One drug dealer stocks about 200 one gallon tins of a well-known American coal-tar dip and 600 gals. (1 and 5 gallon tins) of another brand, with small quantities of blackleg tabloids and some anthrax serum.

There are no veterinaries on the Isthmus other than in the Canal Zone. It is possible that a trade might be

(Continued on page 487)

Vitamin A and D Assay

By Arthur D. Holmes

This report of Dr. Holmes as Chairman of the Vitamin Assay Committee of the American Drug Manufacturers' Association represents the latest ideas of many prominent scientists on what vitamin potency should be and how it should be determined. This report was presented to the U. S. P. conference.

VITAMIN A—Cod liver oil shall be assayed for its vitamin A content by the following process or method. When so assayed the oil shall contain at least 400 vitamin A units per Cm.

This assay is based upon the estimation of the minimum amount of cod liver oil necessary to meet specific growth-promoting as well as relative antiophthalmic requirements in a standard test animal kept under definite control, as regards source, age, and food supply. The test animal shall be albino rats from known source and bred preferably under the direction of the experimenter.

The vitamin A potency of cod liver oil shall be expressed in units per Gm. of oil, the unit to be the minimum daily amount (in mg.) of cod liver oil required to cause, in sixty per cent of the animals in any one group, a gain in weight of at least 15 Gm. within a period of thirty-five days under the conditions of growth and diet specified in this assay. The maximum weight must be attained at the end of the test and the eye condition must be corrected by an amount of cod liver oil not to exceed three times the minimum growth factor.

The vitamin A content per Gm. of cod liver oil is computed by dividing 1,000 mg. (1 Gm.) by the determined minimum daily amount of oil, in mg., required to induce the requisited growth recovery.

Method—It is desirable that each laboratory should establish its own breeding colony or else secure rats under known conditions as to age and dietary history.

To obtain suitable test rats for vitamin A and D assay, females from the colony should be used to rear the actual test animals. These females should be taken off the Colony Diet as soon as weaned and fed the Breeders' Diet below. Later they are placed on a Restricted Diet as stated elsewhere.

Breeders' Diet

Wheat meal (entire kernel)	33.0%
Yellow corn meal (entire kernel)	34.0%
Whole milk powder	21.0%
Old process linseed oil meal	7.0%
Alfalfa leaf flour (green color)	2.0%
Liver (Vacuum dried)	2.0%
Calcium carbonate ($CaCo_3$	0.5%
Sodium Chloride (NaCl)	0.5%

1. The following well-balanced diet, rich in vitamins, has been found satisfactory as a Colony Diet:

Colony Diet

Wheat meal (entire kernel)	33.0%
Yellow corn meal (entire kernel)	33.0%
Whole milk powder	21.0%
Old process linseed oil meal	7.0%
Alfalfa leaf flour (green color)	2.0%
Liver (Vacuum dried)	2.0%
Calcium carbonate ($CaCo_3$)	0.5%
Sodium chloride (NaCl)	0.5%
Cod liver oil (of high vitamin assay)	1.0%

The ingredients of all diets should be ground fine enough to insure a uniform mixture. The diet, with the exception of the whole milk powder and the cod liver oil, may be mixed in large quantities and the milk powder and cod liver oil should be added to such portions as will be consumed in about one week.

This Colony Diet must be supplemented daily by the addition of fresh green leafy material. An approximate allowance of about 5 Gm. daily per rat of this material should be sufficient. Boiled bone or other hard materials should be supplied occasionally for gnawing.

This diet must be supplemented daily by the addition of fresh green leafy material preferably lettuce or spinach, about 5 Gm. being sufficient per rat per day.

When about 100 days old, the females are mated with males which are continuously maintained on the Breeders' Diet. When the young are five to seven days old, the litters should be adjusted to seven animals for each female. On the tenth to twelfth day the mothers are given the Vitamin Restricted Diet.

Vitamin Restricted Diet

Wheat meal (entire kernel)	33.0%
Yellow corn meal (entire kernel)	34.0%
Skimmed milk powder	21.0%
Old process linseed oil meal	7.0%
Yeast (dried) (1)	4.0%
Calcium carbonate ($CaCo_3$)	0.5%
Sodium chloride (NaCl)	0.5%

Later when these rats are weaned (21-23 days old) the mothers are then returned to the Breeders' Diet (not the Colony Diet). The young are continued on the Vitamin Restricted Diet until they are twenty-five to twenty-nine days old at which time they should weigh thirty-eight to forty-five grams. They are then fed the Vitamin A Free Diet so as to deplete them for the vitamin A test.

Vitamin A Free Diet

Casein (Vitamin A free) (2)	18%
Salt mixture (Osborne-Mendel or McCollum No. 185)	4%
Agar (finely ground)	2%
Yeast (dried) (1)	8%
Corn starch	63%
Hydrogenated vegetable oil (vitamin A free)	5%
Vitamin D (3)	

(1) The vitamin "B" value of the yeast should be such that not more than 150 mg. of the yeast is required for a daily-rat-weight recovery dose when animals are on the Sherman Basal Vitamin B Free Ration.

(2) Casein which will pass through a No. 60 sieve is treated with denatured alcohol "3A" (which is a mixture of 100 parts of ethyl alcohol and 5 parts of methyl alcohol).

Reflux 20 lbs. casein 1 hr. with 7 gals. 3A alcohol.

Filter

Reflux 1 hr. with 5 gals. 3A alcohol

Filter

Allow casein to stand over night in 5 gals. 3A alcohol

Reflux 1 hr. with 5 gals. 3A alcohol

Filter

Reflux 1 hr. with 5 gals. 3A alcohol

Filter

Wash with 3 gals. 3A alcohol

Drain and dry the washed casein in a current of air for 16 hrs. at 120F in layers not over ¼ in. deep.

(3) In order to insure sufficient antirachitic activity one-fourth of the yeast should be irradiated before it is incorporated in the diet. To accomplish this the powdered yeast in a layer not exceeding one-sixteenth of an inch in depth is irradiated for fifteen minutes at a distance of 12 or 18 inches with a quartz mercury vapor lamp. The yeast should be stirred during exposure. If desired, the antirachitic factory may be supplied by other materials. Whatever material is used, it must be vitamin A free and its antirachitic potency should be such as will provide antirachitic activity in the diet equivalent to 3% of a cod liver oil having 133 vitamin D units per gram.

Vitamin A Test

The animals should be fed the Vitamin A Free Diet until there is either a decline in weight or a stationary weight for at least seven days. Preferably xerophthalmia should be manifest at this time but declining weight or stationary weight for seven days and definite eye conditions do not necessarily occur simultaneously. In any case, the weight criteria should be used for the administration of cod liver oil to the test animal. As a check, the control test rats must show both symptoms not later than 10 days after the administration of the cod liver oil to the test animals has begun. In order to insure more comparable conditions the beginning of the administration of the cod liver oil should preferably not occur before the 30th day or after the 45th day of the vitamin A free preparatory period.

The experimental animals should be divided into groups of six rats each, one group to serve as a control and the others to be treated with varying amounts of the cod liver oil under test, each animal within the respective groups being given the same dosage.

Cod liver oil being so potent should be diluted with a vitamin A and D free oil such as peanut or corn oil. These dilutions should be prepared as often as once per week. The total daily volume of the diluted oil

for each rat shall be 0.1 c. c. This diluted cod liver oil should be fed separate from the diet. The control animals should receive 0.1 c. c. daily of the oil used as a diluent. The time for its administration should be judged by the same criteria as that for the cod liver oil.

Any animal that dies from causes other than vitamin A deficiency in less than two weeks after the beginning of treatment should not be included in judging the results of the test. A record should be made three times a week of the body weight and the condition of the eyes during the test period. The condition of the eyes may be recorded as normal, watery, sensitive to light, oedema, bloody exudate, pustules, and opacity of cornea.

Vitamin D (Antirachitic)—Cod liver oil shall be assayed for its vitamin D content by the following method. When so assayed the oil shall contain at least 100 vitamin D units per gram.

This assay is based upon the estimation of the minimum amount of cod liver oil necessary to initiate a specific degree of recalcification in the leg bones of rachitic rats reared and fed under definite control as specified.

The vitamin D potency of cod liver oil shall be expressed in units per Gm. of oil, the unit to be the minimum average daily amount (in mg.) of cod liver oil required to produce, in sixty per cent of the animals in any one group, a degree of recalcification represented by a narrow continuous "line" across the metaphysis of the leg bones of the rats which have been kept and fed under the conditions as specified in the assay.

The vitamin D content per Gm. of cod liver oil is computed by dividing 1,000 mg. (1 Gm.) by the determined minimum average daily amount of oil, in mg., required to induce the requisited degree of recovery. The average daily dose is understood to be the total amount of cod liver oil given divided by the length of the test periods, ten days.

Method—Experimental animals for vitamin D test, obtained from mothers which have been reared and bred on the Breeders' Diet, are fed the Vitamin Restricted Diet until they are twenty-eight to thirty-two days old and weigh fifty to sixty Gm. They are then fed the Steenbock Ricket-Producing Diet, No. 2,965, or the McCollum Ricket-Producing Diet, No—3143

Steenbock Ricket-Producing Diet, No. 2965

Whole yellow corn (freshly ground	76%
Wheat gluton	20%
Calcium carbonate ($CaCo_3$)	3%
Sodium chloride (NaCl)	1%

McCollum Ricket-Producing Diet No. 3143

Corn (yellow)	33%
Wheat (soft winter wheat)	33%
Wheat gluten	15%
Gelatin	15%
Calcium carbonate ($CaCo_3$)	3%
Sodium chloride (NaCl)	1%

During the period of preparation for the test and while on test the animals should receive distilled water.

After the experimental animals have been on the rachitic diet for a suitable period (18 to 20 days) examine four rats, by the "line test" as described later, to ascertain whether a satisfactory stage of rickets has been attained. If so, the remainder are are considered as satisfactory for the test and should be divided into groups of seven animals each. It is desirable to have at least four groups, one as control, and three for treatment with the cod liver oil in varying doses so that one can judge the potency of the oil above and below the unit value sought.

From the beginning of administration of the cod liver oil the rats should be kept in individual cages and a record should be made of the daily food consumption.

The cod liver oil should be diluted with a vitamin A and D free oil, such as peanut or corn oil so that the total daily volume of oil consumed by each rat shall be 0.1 c. c. These dilutions should be prepared as often as once per week. The oil should be fed separate from the diet. A control group of representative animals should receive 0.1 c. c. daily of the diluent.

The diluted cod liver oil (or the diluent) should be given for eight consecutive days. The rats are continued on the rachitic diet for two remaining days of the test period to allow for the latent effect of the cod liver oil.

Any animal which has lost weight continuously during the test period; has eaten less than two Gm. of food on two consecutive days; or has average to eat less than four Gm. of food per day should be excluded from the final interpretation.

At the conclusion of the tenth day of the test, the animals should be killed and the femur and tibia bones (or ulna and radius) removed from the right leg and preserved in formaldehyde (10%) for examination. When ready for staining the bones should be thoroughly rinsed in water, split, placed in acetone for three minutes, dried on a blotter, placed in silver nitrate (2%) three minutes, intensified under bright light until the "line" is clearly evident, placed in sodium thiosulfate solution (5%) for three minutes, and examined under a microscope. Reserve the bones from one other leg in formaldehyde for possible confirmation test.

Sources and Specifications for Materials Used in the Preparation of Experimental Diets Recommended by The Vitamin Assay Committee for the Vitamin A and D Assay of Cod Liver Oil.

AGAR—Parke, Davis & Co., Detroit, Michigan.

Specifications: To be requisitioned as Powdered Agar No. 826256f or A. D. M. A. (Emmett). A special lot has been set aside for this years investigations.

ALFALFA LEAF MEAL—The Garten Feed Co., 515 South Senate Avenue, Indianapolis, Indiana.

Specifications: Alfalfa Leaf Meal Triple Ground No. 1 Meal. Protein 17 to 20%—Fiber 18 to 20%.

CASEIN—The Casein Manufacturing Company of America, Inc., 205 East 42nd Street, New York, N. Y.

Specification: D-3 Brand; Acidity 2.5%, Moisture 10%, Ash 4%, Fat 2%.

CORN STARCH—Stein, Hall & Co., Inc., 285 Madison Ave., New York.

Specifications: Special material for vitamin studies.

GELATIN—American Agricultural Chem. Co., Michigan Carbon Works, Detroit, Michigan.

Specifications: Finely ground No. 431.

GLUTEN, WHEAT—The Pure Gluton Food Co., 90 W. Broadway, New York.

Specifications: Dry Basis

Ether Extract	1.99
Ash	1.54
Protein	81.08 (equal to 14.22% Nitrogen)
Starch not over	.11
Crude Fiber	.40
Nitrogen Free Extract	14.99

HYDROGENATED VEGETABLE OIL—Purchase Locally.

Specifications: Crisco.

LINSEED OIL MEAL—The Garten Feed Co., 515 South Senate Avenue, Indianapolis, Indiana.

Specifications: Old Process Linseed Oil Meal—34% Protein.

LIVER—The Wilson Laboratories, 4221 South Western Avenue Blvd., Chicago, Illinois.

Specifications: (1) The kind of liver to be used—hog liver.

(2) Liver to be dried in a vacuum of not less than 27½" and a circulating temperature of 170°F.

(3) The product is not to be defatted or treated in any way.

(4) The product to be ground to about 40 mesh.

MILK POWDER, SKIM—The Borden Company, N. Franklin Street.

MILK POWDER, WHOLE—Syracuse, N. Y.

Specifications: A sufficient quantity of these products will be reserved by the Borden Company to meet the needs of all members of the Committee.

PEANUT OIL—Welch, Holme & Clark Co., Inc., 563 Greenwich St., New York.

Specifications: Acid less than .05%, fire about 665F, flash about 570, Cold Test about 35°, Saponification number about 190 and iodine number about 89.

SALTS—Purchase of any reputable manufacturer.

Specifications: C. P. or U. S. P.

WHEAT FLOUR—Frank T. Caughey, Detroit, Michigan.

Specifications: Ground soft winter wheat—entire kernel—preferably white (ground superfine to pass a 20 mesh scive or finer) Attention: Mr. Bauman.

YEAST—Northwestern Yeast Company, 1750 North Ashland Avenue, Chicago, Illinois.

Specifications: Pure Dehydrated Yeast—99% must pass through a No. 60 sieve.

YELLOW CORN—Frank T. Caughey, Detroit, Michigan.

Specifications: Ground yellow corn—entire kernel (ground superfine to pass at least a 20 mesh sieve) Attention: Mr. Bauman.

Richard V. S. Hillier of the R. Hillier's Son Corp., crude botanical merchant and miller, announces that he has withdrawn his interest in the Vanco Products Co. Arthur J. Kirby of the Kirby Wrede Co. has acquired the holdings formerly held by Richard Hillier. The company specializes in Spanish saffron and will continue to do business at 46 Dey st., with Harold V. S. Hillier acting as vice-president and treasurer.

Industry's Books

Dangerous Drugs, by Arthur Woods, 123 pages, Yale University Press, New Haven, Conn., $2.00 net.

An interesting exposition of the nature of the drugs, the nature of the users and the nature of the traffic in narcotic drugs with a view to pointing the way to world-wide control of this traffic.

The Life and Times of Lydia E. Pinkham, by Robert Collyer Washburn, 220 pages, G. P. Putnam's Sons, New York, $3.50 net.

A fascinating account of the psychology of the times and the psychology of the founder of the Pinkham Medicine Company. Lydia E. Pinkham was an ardent feminist, abolitionist, prohibitionist, (this last despite the fact that her preparation originally contained 20 per cent. alcohol and was fairly potable), and probably the pioneer of modern advertising methods and copy. She originated "Coming events cast their shadow before" and "Reach for a vegetable instead of a sweet". She was the first to use testimonial advertising. She never consciously made a misstatement in her advertising or on her labels. She was the first large drug manufacturer and a figure of which the industry may well be proud.

Self-Management in Selling, by David R. Osborne, 258 pages, Harper & Brothers, New York, $3.50 net.

The man who trains Studebaker salesmen attempts to codify the principles and methods of successful selling for the salesman who plans to be tomorrow's sales manager.

Economic Handbook of the Soviet Union, 150 pages, American-Russian Chamber of Commerce, New York.

A concise presentation of important and significant data in regard to the national economy of Soviet Russia to the close of the fiscal year ending September 1930.

The Insecurity of Industry, edited by E. M. Patterson, 206 pages, The American Academy of Political and Social Science, Philadelphia.

A symposium of papers on the general subject of unemployment, with some discussion of the middle-aged and elderly worker. Good papers with good names signed to them.

Noguchi, by Gustav Eckstein, 419 pages, Harper & Brothers, New York, $5.00 net.

An inspirational biography of one of the outstanding figures of modern medicine. Born the son of a Japanese peasant, his scientific achievements would do justice to several men. At the age of thirty-seven his tremendous capacity for work had made him a world-wide figure and his tragic death at fifty-two was caused by his exposure to yellow fever received in the course of his investigations into that dread disease. Interesting subject matter handled in an interesting way.

The Cocoa and Chocolate Industry, by A. W. Knapp, 188 pages, Isaac Pitman & Sons, New York, $2.25 net.

The second edition of this work repeats the very interesting historical material and includes amplifications regarding food value, adulteration and definitions, and on storage.

Advertising, by Herbert W. Hess, 516 pages, J. B. Lippincott Co., Philadelphia, Pa., $5.00 net.

A comprehensive, scientific treatment of the construction of advertising and publicity campaigns from the point of view of economics, philosophy and technique, by the head of the merchandising department of the Wharton School of Finance and Commerce.

Interim Revision for Vitamins

Dr. Cook announces after Vitamin Conference that new standards will become effective immediately when agreed upon.

IT IS planned to place into effect new U. S. P. standards for vitamin products as soon as the new standards are agreed upon by the committee of experts, and without waiting for the issuance of the U. S. P. XI, according to E. Fullerton Cook, Chairman of Revision U. S. P. XI. Dr. Cook states that this policy of issuing modifications of U. S. P. standards in the period between revisions is one which is well established and for which there has been ample authority and precedence in all recent revisions. In U. S. P. X there is the following clause, which Dr. Cook states is also contained in the provisions for U. S. P. XI:

"It is recommended that the Committee of Revision be authorized to prepare supplements to the Pharmacopoeia, or lists of admissions or changes at any time they may deem such action desirable."

Two outstanding difficulties attend the modification of an official standard in the interim period, says Dr. Cook. First of these is the necessity of utmost care in the preparation of a new standard and this is being amply protected in the case of vitamins. A second difficulty is the lack of necessary publicity, the old standards being those always easily available in the printed book, but it is believed that again ample publicity can be secured for a subject so important as vitamins.

An idea of the care to which the U. S. P. Revision Committee is going in the preparation of new standards for vitamin products is to be had from the remarkable list of scientists who are members of an auxiliary committee many of whom were present at conference presided over by Dr. Cook at Hotel Pennsylvania, New York, May 7.

Present at the conference was the discoverer of vitamin A, Dr. L. B. Mendel of Yale, as well as the discoverer of vitamin D, Dr. E. V. McCollum of Johns Hopkins. Dr. H. C. Sherman of Columbia, Chairman of American Chemical Society Vitamin Committee, and Dr. Alfred B. Hess, New York, both pioneer workers in vitamins, were present. The Food and Drug Administration was represented by Dr. E. M. Nelson; the Public Health Service by Dr. W. H. Sebrell; the American Drug Manufacturer's Association Vitamin Committee by its Chairman Dr. Arthur D. Holmes, The E. L. Patch Co.

Other vitamin scientists present were: Dr. C. B. Benjamin, McKesson & Robbins; Dr. Charles E. Bills, Mead Johnson & Co.; Dr. Archie Black, E. R. Squibb & Sons; Dr. John Dorsey Craig, New York Post-Graduate Medical School; Dr. R. Adams Dutcher, Pennsylvania State College; Dr. Walter T. Eddy, Columbia University; Dr. A. D. Emmett, Winthrop Chemical Co.; Dr. James H. Jones, University of Pennsylvania Medical School; Dr. Robert L. Jones, Frederick Stearns & Co.; Dr. Henry T. Mason, Health Products Co.; Dr. Carl Nielson, Abbott Laboratories; Dr. L. S. Palmer, University of Minnesota; Dr. H. W. Rhodehamel, Eli Lilly & Co.

Those present at the conference were all members of a Vitamin Committee organized as an auxiliary committee of the U. S. P. Revision Committee. Also included in this group are the following: Dr. John F. Anderson, E. R. Squibb & Sons; Dr. J. H. Burn, Director of Biological Laboratories, Pharmaceutical Society of Great Britain; Dr. Harriette Chick, Lister Institute, England; Dr. Katherine H. Coward, Pharmacological Laboratories, Pharmaceutical Society of Great Britain; Prof. J. C. Drummond, University College, London; C. H. Hampshire, Secretary, British Pharmacopoeia Commission; Dr. E. Mellenby, Chairman of Accessory Food Factors Committee (Vitamin) of British Medical Research Council, and Chairman Vitamin Standards Committee of Health Committee of League of Nations, Sheffield, England; Dr. A. Graeme Mitchell, University of Cincinnati; Dr. Earl R. Norris, University of Washington; Prof. E. Poulsson, Norway; Dr. Floyd K. Riggs, Rutgers University; Dr. Harry Steenbock, University of Wisconsin.

Proper potency of vitamin products was discussed, as well as the subjects of breeding colonies, diets, colorometric test, feeding periods, etc.

No attempt was made to reach a final decision on the standards to be adopted by the Pharmacopoeia. The agreements reached at the meeting will be formulated by an interim committee appointed by Dr. Cook and consisting of Doctors Sherman, Mendel, Nelson, Bills, McColum, Holmes and Steenbock. This committee will meet before some of the members sail for London to attend the conference called by the Health Organization of the League of Nations and will agree upon a presentation of the conclusions of the American Conference for presentation in London. The London meeting will convene on June 17 and it is known that Dr. McCollum and Dr. Steenbock will be American delegates, and possibly some others will attend.

The international agreements reached at the London Conference will be brought to the attention of the American Committee at another conference in the Fall. Members of the American Conference will be given a thorough and practical trial in a number of American laboratories for a period of one year before the conference makes its final recommendations for Pharmacopoeial adoption.

Asthma and Other Remedies

Allergie Diagnostics and Allergie Therapeutics are now available in the form of extracts, serving both for testing and treatment. They are made by the Saechsischen Serumwerk.

The so-called passive method of treatment with serums obtained from immunized animals has also been used in addition to active desensitization with poisons, which are intended to produce anti-bodies in the organism itself. Good results have been obtained. The antidote is herewith introduced into the body, and the therapy consists of direct neutralization of the pollen poison. Such a product is Pollantin which is made by Schimmel & Co.

The general conditions are quite similar in persons afflicted with asthma. In a certain number of cases the condition is one of super-sensitivity, and in other cases a condition of bronchial affection. Such banal substances, as particles of dust, the dust in rooms as well as in the air, fungi or molds from mattresses and pillows, bed springs, the scaly particles thrown off from the skin of people and different animals, hair and the like may often be numbered amongst the active causes of the asthmatic condition. Then again foods, proteins from meat and fish, as well as from vegetables, milk and cheese and the like may also be included in this category. Inasmuch as asthma and hay fever have the same pathology, the methods of testing for the disease and its treatment are the same. The patient is innoculated with extracts of the substances under examination and the super-sensitivity of the patient towards one or the other is recognized by the irritation caused. The desensitization therapy is then carried out in the same manner as described above.

It must, however, be pointed out here that considerable experience is required before the experimenter can correctly interpret the reactions produced in his tests. This is more so in the case of asthma than of hay fever. Even when all conditions have been established, it still remains a fact that the desensitization of the patient is not altogether satisfactory.

Very little is known regarding the chemical composition of the actual poison which is responsible for asthma. The extracts, which are used for testing and treatment, are generally prepared by treating the various substances, such as scaly particles, dust, feathers, etc., with a weak alkali solution or with ordinary water. The solutions are filtered free of germs and used in that condition. The activity of the preparation must be tested in each instance. It may be assumed with certainty that certain of the active substances do not contain albumens, while they are present in certain others. The pharmaceutical industry is still far from producing preparations of the pure products.

Harmin is manufactured by E. Merck. It is administered subcutaneously in doses of two to six centigrams in a two per cent. concentrated solution. The literature on this drug follows: Mercks Jahresberichte, 1928; Beringer, Deutsche med. Wochenschrift, 1928, number 22; Schuster, Med. Klin., 1929, number 14; Rustige, Deuts chemed. Wochenschrift, 1929, number 15; Berliner med. Gesellschaft, Feb. 13, 1929 meeting; Dalmer, Deuts chemed. Wochenschrift 1929, number 38; Flury, Muenchner med. Wochenschrift, 1929, number 28; Pineas, Deutsche med. Wochenschrift, 1929, number 22.

New Patents Reveal--

UNITED STATES PATENTS

Substituted Guanidines

These products, of therapeutical value, are made by treating various dialkyl-cyanamids with a salt of an amine which has at least one hydrogen atom attached to the nitrogen atom. The operation is carried out in the presence of the corresponding free amine. Herbert Schotte, Berlin-Reinickendorf, Germany, assignor, Schering-Kahlbaum A. G., Berlin,Germany. U. S. P. No. 1,795,738, filed September 13, 1928.

Vanillan from Safrol

This process is particularly concerned with the preparation of vanillin and isochavibetol from safrol. The safrol is first converted into a mixture of isomeric phenol ethers of 4-methoxy-3-hydroxy-1-propenylbenzol, which is isochavibetol and 4-hydroxy-3-methoxy-1-propenylbenzol, which is isoeugenol. One of these phenol ethers is oxidized to an aldehyde. The oxidation is carried out in presence of nitrobenzol and with aid of excess free alkali. Frits E. Stockelbach, Montclair, N. J. U. S. P. No. 1,792,717, filed May 17, 1927.

Arsenobenzene Derivatives

This process is concerned with the preparation of alkaline earth metal salts of arsenobenzene derivatives. These products contain one amino group substituted by a sulphomethyl residue. Richard Werner, Heidelberg and Albert Rothmann Berlin-Charlottenburg, Germany, assignors, Winthrop Chemical Co., Inc., New York. U. S. P. No. 1,779,649, filed September 21, 1929.

Bottle Cap and Measuring Device

The feature of this bottle is a combined cap and measuring device. Cap is provided with usual flange which makes contact with neck of bottle after cap has been screwed on. Cap is extended into a vessel used for measuring out medicament, this extending piece being normally inverted when cap is closing bottle. When cap is removed, bottle can be inverted and then forms measuring vessel. Graduations are provided. Edward I. Gordon, McKees Rocks, Pa. U. S. P. No. 1,780,875, filed November 25, 1927.

Hydrogen Peroxide

Process of making hydrogen peroxide consists in its essential details in adding strontium peroxide to mixture of acids. One of acids is kind that will form relatively insoluble strontium salt, and other will form relatively soluble strontium salt. Second acid is present in small amount. Result of process is that a relatively insoluble strontium salt is formed as well as hydrogen peroxide. James B Pierce, Jr., Charleston, W. Va , assignor, Barium Reduction Corp., Charleston, W. Va. U. S. P. No. 1,781,859, filed December 14, 1927.

Mercury Compound of Metacresol

A new medicinal product is made by starting with a cresol isomer and filtering into same an alcoholic solution of potassium hydroxide. Then there is added an alcoholic solution of a mercuric salt. This operation is carried out quite slowly, and agitated. Product is concentrated and reaction further promoted by low heat. Reaction product is cooled, filtered, and washed until onlyfaint traces of chlorides appear. Final operation is drying.Duncan McD. Copley and John P. Snyder, Norwich, Conn., assignors, Norwich Pharmacal Co., Norwich, Conn. U. S. P. No. 1,782,090, filed September 14, 1927.

Alkyl Formates

Liquid aliphatic alcohols are used as starting materials. The alcohols are treated with carbon monoxide and a substantial amount of an inert gas selected. Rudolf Wietzel, Ludwigshafen-on-the-Rhine, Germany, assignor, I. G. Farbenindustrie A. G., Frankfort-on-the-Main, Germany. U. S. P. No. 1,782 591, filed February 6, 1926.

Colloidal Silver Iodine Compound

Starting material is an insoluble silver salt, in form of colloidal solution which is caused to react with an iodide of an alkali forming metal. Harry S. Keelan, Brooklyn, N. Y., assignor, E. R. Squibb & Sons, Brooklyn, N. Y. U. S. P. No. 1,783,334, filed January 13, 1927.

Disinfectant Compositions

These are obtained in dust-like state. The compositions contain mercury and are made by effecting a reaction by intimate contact between a mercuric salt and an alkyl derivative of tetravalent lead and the process is carried out in the absence of a liquid diluent. Max Engelmann, Wilmington, Del., assignor, E. I. du Pont de Nemour's & Co., Wilmington, Del. U. S. P. No. 1,783,377, filed February 27, 1928.

BRITISH PATENTS

Solid Compounds of Hydrogen Peroxide

Solid compounds of hydrogen peroxide are prepared by passing gaseous mixtures containing vapors of hydrogen peroxide over solid substances which unite with it, such as urea, methylol ureas, acetamide, urethane, succinic amide, mannitol, erythritol, pinacone, hexamethylenetetramine, or alkali metal sulphates, carbonates, borates, nitrates phosphates or pyrophosphates. The substances may be cooled with ice water or the treatment may be carried out at ordinary temperatures, or at raised temperatures not above 80 degrees C and under conditions which avoid condensation of water or other vapors. Stabilizer such as starch, dextrin, amines, ethyl alcohol, borates, or acid or neutral pyrophosphates may be incorporated in small quantities with the solid substances. The products are of therpeutic value. I. G. Farbenindustrie A. G., Frankfort-on-Main, Germany B P. No. 339,332

GERMAN PATENTS

New Drugs

These new therapeutic agents are salts of beta-phenylquinoline-4-carboxylic acid and their derivatives. They are made by allowing cyclic or heterocyclic substituted aliphatic amines or their salts to act upon the free acid or the salts of this acid. Schering Kahlbaum A. G., Berlin, Germany. G. P. No. 504,167, filed June 18, 1926

Sterile Injection Solutions

Therapeutically-active, sterile and stable solutions of para-dialkyl-amino-aryl-phosphinous acid salts are sterlized after the addition of substances which yield acids. Or else the solid components may be mixed together and mixture dissolved and solution sterilized. I. G. Farbenindustrie A. G., Frankfurt-am-Main, Germany. G. P. No. 504,183, filed March 30, 1928.

Soluble Cholesterin Compounds

A melt is obtained at temperature up to 150° C. by melting together cholesterin with di-basic or multi-basic inorganic, aliphatic or aromatic acid anhydrides. Acid anhydrides which have not taken part in reaction and neutral ingredients are separated by using gaseous or concentrated, aqueous ammonia to effect solution of ingredients. Chemische Fabrik Promonta G.m.b.H., Hamburg, Germany. G. P. No. 504,826, filed July 6, 1927.

Pharmaceutical Preparations

Process relates to preparation of pharmaceutical compounds, particularly of salts of hetero compounds and alkaloids. These bases are converted into salts of hydroxylated diraryl-ketonic-carboxylic acids. I. G. Farbenindustrie A. G., Frankfurt-am-Main, Germany. G P. No. 504,681, filed October 7, 1927.

Dihydromorphine

Tetrahydrothebaine, which may be obtained by the hydrogenation of the baine salts, is treated with strong de-alkylating agents, such as hydrobromic acid. A mixture, which contains other hydrogenation products as well as tetrahydrothebaine, may be treated in such a manner, that dihydrothebainone, separated from mixture, is de-alkylated. C. H. Boehringer Sohn, Nieder Ingleheim am Rhein, Germany. G. P. No. 504,830, filed February 16, 1927.

Disinfectants and the Like

This process is for preparation of disinfectants and cosmetic materials from soap and aldehyde, the mixture of soap and aldehyde being subjected to action of one or more halogens. Dr. Cornelius Keleti, Budapest, Hungary. G. P. No. 504,693, filed August 7, 1926.

Manufacture of Vanillin

Safrol or isosafrol is first treated in usual manner at elevated temperatures with alcoholic solutions of alkalies. Reaction product is treated with methylating agents. Propenyl compounds are oxidized in usual manner with aid of ozone and the aldehyde is obtained. The alkoxymethyl radicle is split off by heating with dilute solutions of acids. Vanillin is separated by ordinary processes from iso-vanillin which is formed at same time. J. D. Riedel-E. de Haen A. G., Berlin-Britz, Germany. G. P. No. 505,404, filed November 11, 1925.

New Therapeutic Agents

These new therapeutic agents are characterized by the fact that they do not injure tissues when used in treatment of disease. Thus the well-known therapeutically-active basic compounds of heavy metals are coupled so as to form salts with the petides. These peptides are obtained by degradation of albuminous substances contained in these tissues and organs, to which these therapeutic agents are to be applied. Dr. Hermann Reil, Oberursel, Tannus, Germany. G. P. No. 505,062, filed June 17, 1926.

Vegetable Lecithin From Oil Seeds

Process is particularly adapted to production of vegetable lecithin from soya beans. These seeds are comminuted and subjected to preliminary treatment with highly concentrated methanol. Preliminary treatment last only a short time, and is carried out cold. Then lecithin is extracted with usual extractants. Hermann Bollmann and Dr. Bruno Rewald, Hamburg, Germany. G. P. No. 505,354, filed December 22, 1927.

Products from Mountain Ash Berries

Air-dried berries, freed from adhering impurities, are completely dehydrated by heating at 70° to 80° C. Then the berries are cooled down very quickly to approximately 0° C., and finally ground. Chemische-Pharmazeutische Praeparate Paul Grube & Co., Breslau, Germany. G. P No. 505,356, filed April 17, 1927.

Sero-Vaccines

These sero-vaccines are characterized by being sterile and stable for a long time. The phagerized cultures are spread over young bacterial cultures, as for example staphylococci or coli bacteria and on serum products, such as for example exudations from the pectoral cavity. Then the mass is subjected to ultraviolet light in vessels made of ultraviolet glass. The product is allowed to remain for up to a year so that autoylsis takes place. Then it is treated again with ultraviolet light rays. Dr. George Mayer, Dillingen, Donau, Germany. G. P. No. 505,707, filed April 3, 1927.

Inactive Menthol

It has been found that the mixture of isomeric menthols, which has only a small technical value due to the fact that its odor is bad, can be directly converted into inactive menthol, which is the racemate of natural menthol. This is carried out under pressure with hydrogen in presence of catalysts. A menthol mixture is obtained, having the same composition as the reduction product of thymol. Inactive menthol of high melting point can be obtained from this mixture having the same odor and taste as natural active menthol.

The treatment of the liquid, isomeric menthol mixture can be carried out so that the liquid menthol mixture is added to the thymol and then the mixture is treated under pressure with hydrogen in presence of catalyst. Inactive menthol is then recovered. Rheinische Kampfer-Fabrik G.m.b.H., Duesseldorf-Oberkassel, Germany. G. P. No. 516,651, filed November 11, 1922.

Making Thymol

The new condensation products of alkylated phenols and ketones can be used as starting materials in thymol production. The aforementioned compounds are converted into alkylated coumarane and alkyl-iso-alkylene-phenols by heating to a high temperature with catalysts, such as aluminum phenolate or magnesium phenolate. Products obtained are treated with hydrogen and converted into thymol, or its isomers and homologues. It has now been found that starting materials do not have to be hydrogenated after being decomposed, but that hydrogenation process can be applied directly. It has been found advisable to use a second catalyst besides the hydrogenating catalyst.

The process is best carried out by treating with hydrogen the condensation products of the alkylated phenols and ketones with approximately 0.1 per cent. of the aluminum of compound of the unsaturated phenol, that is expected, and with approximately one per cent. of a nickel catalyst in an autoclave at 180° to 190°C., until 4 atoms of hydrogen have been absorbed. Schering Kahlbaum A. G., Berlin, Germany. G. P. No. 518,209, filed August 17, 1926.

Organic Auro-Mercapto-Acids

These new pharmaceuticals are prepared by allowing auric salts to act on the corresponding mercapto-acids in the presence

(Continued on page 458)

The LOOK *of* LEADERSHIP

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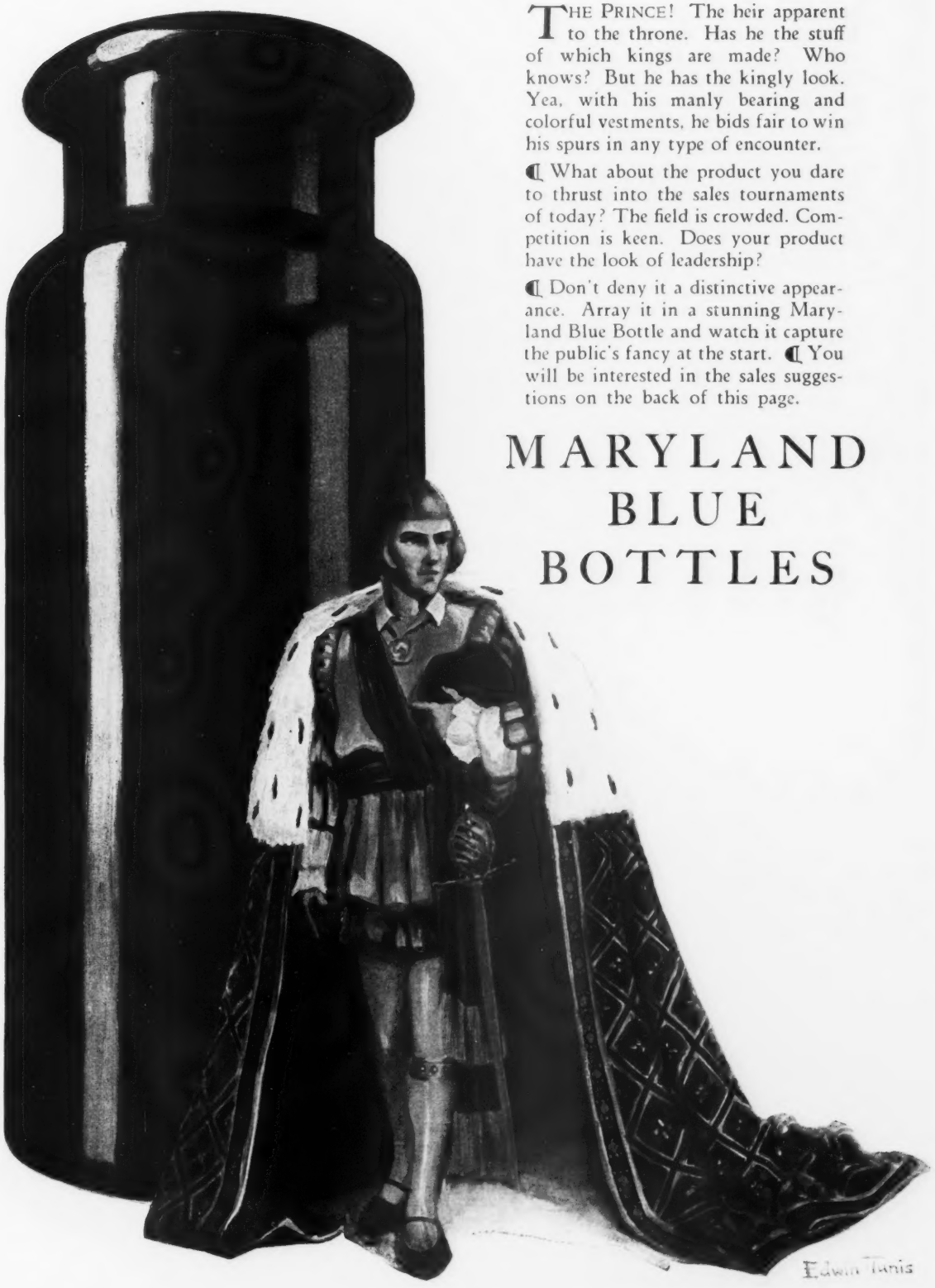

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The Literature Says:-

Quinine In Tablets and Ampoules

The tablet or the ampoule, properly sampled, is extracted with the aid of light petroleum for the purpose of removing the paraffin and then the residue is dried and powdered. The powdered substance is digested with 50 c.c. of 1% hydrochloric acid at 50° to 60° C. The clear solution is treated with 20 cc. of 10% sodium hydroxide and the quinine removed by three extractions with 20 cc. of chloroform. The solution is evaporated to dryness and the quinine weighed after being heated to constant weight at 100° C. E. J. Emmanuel, Zeitschrift fuer analytische Chemie, volume 82 page 296.

Pharmaceutical Emulsions

Gum acacia is preferred as an emulsifying agent in the preparation of pharmaceutical emulsions. It is possible to add gum tragacanth as a thickener. Various factors affecting the "creaming" of the emulsion, are discussed and methods are described. Details are given for the large scale preparation of a typical pharmaceutical emulsion. E. L. Smith, Quarterly Journal of Pharmacy, volume 3, pages 362-372.

Characterization of Neodorm

This substance is alpha-bromo-alpha-isopropylbutyramide. It sublimes in characteristic crystals. It is quantitatively decomposed by the action of boiling water and yields with boiling aqueous sodium hydroxide mainly ethylisopropyl ketone, hydrobromic acid and hydrocyanic acid, with some ammonia. It gives a positive iodoform reaction and with Nessler's or Milton's reagent a white precipitate, which is soluble in excess. Its white mercury derivative is converted by potassium iodide into a yellow substance, which becomes red when kept for some time. G. Kuhlmann, Phar. Ztg., volume 76, 113.

Mechanical Extraction of Lemon Oil

Different processes used for extraction of lemon oil are described in detail and working costs and yields given. It is reported that the sponge oil is superior to the mechanical oil since the latter contains a lower proportion of odoriferous compounds and has an odor resembling grass. This is caused by prolonged and intensive abrasion to which the peel is subjected. The loss in perfume, and especially in the reduction of the proportion of citral, which the oil undergoes, is due to fermentation for the most part. Fermentation takes place more intensely in a strong air current. The use of sterile water for boiling or addition of sodium benzoate to the oil is suggested as remedies. F. LaFace, Boll. Uff. R. Staz. Sperim. Ind. Ess. Calabria, volume 5, pages 129ff.

Bath Cologne

A cheap bath cologne can be prepared as follows. Seven and one half parts saponin or 28 parts dry quassia wood extract are added to 22,500 parts water. The same purpose is served by 2½% solution of soap; also by the use of terpeneless oils and isopropyl alcohol. The following formula gives a good preparation which consists of 17 cc. of terpeneless bergamot oil, 12.5 cc. of terpeneless oil of lemon, 14 cc. of terpeneless petit grain oil, 1.75 cc. of terpeneless oil of rosemary, 56 grams tincture of benzoin, 340 grams orange flower water, 1800 grams alcohol and 3600 grams of water. Isopropyl alcohol may be used in place of alcohol. It should be remembered in using isopropyl alcohol that a 50% isopropyl alcohol has the same solvent action as 90% ethyl alcohol. The two alcohols may be used in admixture for this purpose. Pharm. Zentralhalle.

Brown Hair Dye

A simple and harmless preparation for dyeing gray hair brown can be derived from the green shell of the walnut. These shells are allowed to lie in heaps for some time. Then they are digested with water and the brew obtained used as coloring agent. It is also possible to proceed in another manner. One part of ammonia and 2 parts water are used for extracting the shells. The mixture obtained is evaporated to a thick syrup, and mixed with half its weight of eau de Cologne. The tannin contained in the walnut shells, causes a brownish coloration of the hair which endures for a long time. Apotheker Zeitung.

Camphor Containing Toothpaste

Seventy-five parts of precipitated chalk are mixed with 12 parts magnesium, 13 parts milk sugar, 2 parts camphor and 3 parts ether. The camphor is first dissolved in the ether and mixed with the precipitated chalk, and the powder dried in air. Then other ingredients are mixed in. Pharm. Zentralhalle.

Nail Polish Lacquer

Two parts solid paraffin, 20 parts chloroform and perfume, (geranium oil or the like). Another formula calls for 10 parts celluloid, 50 parts acetone and same proportion of amyl acetate. In addition also two drops of alcoholic solution of eosin (10% concentration) for every 100 grams. The polish produced is very long enduring but can be removed at any time by means of a little acetone. Still another formula calls for 100 parts of Siam gum benzoin, 300 parts methanol, 700 parts amyl acetate, 50 parts collodion cotton and 50 parts 1% alcoholic solution of eosin. Apotheker Zeitung.

Oxygenated Bath Salts

This preparation is made in the following manner. Five hundred parts of carefully dried sodium carbonate are mixed with 100 parts of 3% hydrogen peroxide. The sodium carbonate absorbs the hydrogen peroxide to such an extent that a dusty dry powder is obtained, which is passed through a screen. As soon as the preparation is dissolved in water, oxygen gas is immediately released. Pharm. Zentralhalle.

Luminescence Analysis of Homeopathic Triturates

Determinations were made of the homogeneity and particle size of triturates of uranium nitrate and mercurous chloride by the Danckworth luminescence method. The greater the degree of comminution, the more marked is the fluorescence color of the lactose compared with that of the substance under examination. With progressive trituration animal charcoal becomes darker. A. Kuhn, Apoth. Ztg., volume 45, pages 343-4.

Sterilization of Urotropin and Hexamethylenetetramine Solutions

A 40% solution of urotropin or hexemethylenetetramine can be sterilized without any appreciable decomposition by treatment with a current of steam during a period of thirty minutes. When weaker solutions are treated, then decomposition sets in with the formation of ammonia and formaldehyde. Recovery

of the products, ammonia and formaldehyde, which are formed during the sterilization, cannot be observed during a period of 48 hours. The 40% concentrated solution of urotropine or hexmethylenetetramine, when treated in an autoclave at 115° to 120° C., is decomposed. Another process should be used for the sterilization of the preparation in order to obtain it free from bacteria and aseptic. J. Thomann, "Pharmac. Acta Helv.," volume 5, pages 30-33.

Crystallized Female Sexual Hormones

The author first gives a historical review and discusses results of medical work from the standpoint of the physiological and chemical methods proposed for crystalization of hormones. The hormone, that crystallizes in white leaflets of melting point 250° 251° C., possesses a lipoid character in its solubility. The solubility of this hormone in water is very slight, for in 100 cc. of water approximately 1.8 milligram dissolves at 18° C. The optical rotation at 18° C. is +156.1°; its ultraviolet absorption shows a characteristic maximum at 283 to 285 mu.

The pure hormone possesses all the physiological properties, which can be studied in the impure hormone. In physiological tests, which were carried out on castrated mice, it has an activity of 8 to 40 million units per gram according to the technic used in the testing.

Doisy has heretofore characterized the crystalliates only from the physiological standpoint, and the results obtained by him agree with those obtained by the author. There is no longer any doubt regarding the homogeneity of the isolated substance. The most likely molecular formulae which have been proposed for the hormone up to the present time are $C_{24}H_{28}O_3$ or $C_{24}H_{30}O_3$. The chemical constitution of the hormone can be safely established to be that of an unsaturated oxy-lactone through a series of transformations and by the preparation of crystallized derivatives.

The chemical constitution can be accurately established to be that of an unsaturated oxy-lactone through a series of transformations and through the preparation of crystallized derivatives. Two oxygen atoms lie in a lactone group, the third being present in the hydroxyl group. Physiological tests, which were carried out on conversion products of the highly active oils, showed that this arrangement is probably correct. Oils, which were treated with phenyl cyanate or with benzoyl chloride, exhibited a characteristic retardation of their activity which was prolonged over many days. The normal activity of the substances returns after saponification.

The presence of the alcohol group is ascertained by the preparation of a crystallized acetyl derivative, which has a melting point of 126° C., and the above molecular formulae are substantiated. These formulae show that there is a certain connection with the bile acids, but there is lacking experimental proof of the same. At the present time there are only a few criteria available, which indicate that the hormone belongs to the classes of substances of the sterines and bile acids. Thus there is the possible connection with pregnandiol, which is $C_{21}H_{36}O_2$, a neutral oxidation product of sterine. This has been isolated as a substance which accompanies the hormone, from the urine of pregnant persons. This substance has physical and chemical properties which are like those of the basic substances of the vegetable digitalis heart poisons the poisons found in toads. A crystalline derivative can be obtained by the catalytic hydrogenation of the acetate, and a more closer examination of this derivative will yield further information regarding the constitution of the hormone. Dr. A. Butenandt, Chemiker Zeitung, 1930, page 482.

New Nickel Reaction

The nickel ion gives a chromoscopic reaction of great sensitivity, not yet equalled in any manner, in the presence of hydriodic acid. When one or two c.c. of concentracted hydriodi acid (at least ten normal) is mixed with one drop of solution of a nickel salt, after mixing an intense blood red coloration is obtained which disappears as the solution is diluted with water. A very clear grenadine shade is produced with 0.1 milligram of nickel per cubic centimeter of hydriodic acid, on the condition that this ion is not in too diluted a solution (less than forty per cent. of the volume of the solution of hydriodic acid). This coloration does not give the band spectrum, but fixes an absorption of the most refrangible part of the spectrum starting with the green. The hydriodic acid employed should be as slightly colored as possible. This kind of acid is obtained by adding a little mercury to the ordinary acid and agitating the mixture. G. Deniges, Soc. Pharm., Bordeaux, volume 4, pages 217-8.

Gravimetric Determination of Colocynthin in Extractum Colocynthidis

The extract, one gram, is washed twice with ether, five cubic centimeters dissolved in warm absolute alcohol, twenty cubic centimeters. The solution is boiled with animal charcoal, two grams, filtered, and the filtrate is evaporated to a syrup. The residue is extracted with chloroform, and the solvent is removed. The residue is then dissolved in distilled water, twenty cubic centimeters, mixed with barium sulphate, half a gram, and filtered. The filtrate is evaporated to dryness and heated at a temperature of 50 to 60 degrees C to constant weight. The fruit yielded twenty five to thirty per cent. of extract containing about six per cent. of colocynthin. Ber. Ungar. Phar., Ges., volume 4, 196-207.

New Patents Reveal---

(*Continued from page 456*)

of sulphur dioxide. Schering-Kahlbaum A. G., Berlin, Germany. G. P. No. 506,443, filed March 3, 1925.

Purification of Harmine

The crude alkaloid harmine is treated at 0° C. with small quantities of potassium permanganate in acid solution. E. Merck Chemische Fabrik, Darmstadt, Germany. G. P. No. 507,420, filed June 1, 1928.

Skin Food

This preparation, particularly adapted to keep skin in good condition, consists of certain degradation products of ceratinacious substances. These products are obtained by hydrolysis of starting materials. They are of albuminous nature, insoluble in water, but soluble in solutions of alkalies. Chemische Fabrik Johann A. Wuelfing, Berlin, Germany. G. P. No. 499,251, filed October 12, 1926.

Making Glycerophosphates

Starting material is soya bean slime, obtained by treatment of soya bean or soya bean press cake, freed in certain cases from the oil and lecithin contents, with extracting media. This product is saponified with aqueous solutions of alkalies or solutions of latter in water and alcohol. The glycerophosphates obtained are separated from degradation products, that is soaps, bases, and glycerin, by means of alcohol, and extracted with water. J. D. Riedel-E. de Haen A. G., Berlin, Britz, Germany. G. P. No. 507,794, filed July 15, 1927.

Net earnings of the American I. G. Chemical Corp. for the fiscal year ended March 31, 1931 amounted to $2,322,952. This compares with $2,088,442 for the eleven months ended March 31, 1930. Total income for the fiscal year just ended amounted to $4,252,987 as against $3,786,562 for the previous period.

Relative Merit of Psyllium and Other Plantago Seeds

By J. F. Montague*

HAVING been one of the pioneers in the clinical application of the physical properties of psyllium seed, I am the recipient of many inquiries as to the relative values of the various kinds of seeds of this same general nature which are offered to the medical profession and laity by pharmaceutical houses. Possibly my knowledge and opinions as expressed in answers to these inquiries may be of general interest. In any event, it is on this assumption that the following is submitted.

In a practice devoted exclusively to intestinal and rectal ailments, and at a hospital which likewise treats nothing but such cases, I have had an exceptional opportunity to determine what the relative merits of these varieties are, and, at least insofaras my own experience goes, establish their relative efficiency as a means for combating constipation. My conclusions, and the observations upon which they are based, are presented herewith together with certain suggestions and admonitions which a rather varied and extensive employment of the seed as a remedial agent has furnished.

If the reader will pardon the omission of many technical qualifications, I believe the following general statement will serve well as a point of departure for our observations: Many cases of constipation respond favorably to the employment of those foods and pharmaceuticals which add to that bulky residue which constitutes the most of the fecal mass—many other cases benefit by adding to the intestinal contents a substance possessing lubricant qualities. In response to these known facts medical men have at various times used as remedies certain pharmaceuticals which seemed to have the desired qualities; namely, bulk producing or lubricant ability. As an example of the former may be mentioned bran, and of the latter, mineral oil. Clinical usage of both these agents has, however, brought them to closer view as pharmaceuticals and has made apparent some of their disadvantages. Dissatisfaction with both these substances and others of their kind led members of the medical and pharmaceutical professions to look about for something better. As we all know now the answer is to be found in the seeds of the Plantago species of plants. This is for the reason that they furnish both bulk and lubrication without irritation and without interference with intestinal digestion.

Varieties of the Plantago species have an easily proven value in supplying both bulk and lubricant material. Moreover, they are easy to take and can be used over a long period of time without apparent harm and without habit formation. They seem, therefore, to be ideal for the purpose to which they are put by many doctors and many more laymen. Though all seeds of the common Plantago species have the desired properties, the next point of interest is this: Which

*Medical Director of the Montague Hospital for Intestinal Ailments.

variety possesses these properties to the greatest degree? The question is one of importance and has been the topic of discussion and investigation.

Clinical use soon showed that some varieties possessed greater value than others and that instances of relatively inert psyllium seed did occur. Naturally such psyllium seed is proportionally ineffective as a laxative. Many such instances were attributable to "spoiled" seed—that is, seed which by previous exposure to moisture had been deprived of a large share of its mucilaginous content. However, not all difference in action could be attributed to accidents such as this. By comparison in test tube and repeated clinical tests in the intestinal tract of like amounts of the psyllium seed of different origin, the relative order of their efficiency appears to me to be as follows:—Spanish, French and German.

The relatively smaller silky Spanish seeds are most active as lubricant producers and though their bulk is less, they are the most potent of the psyllium seeds as an anti-constipation remedy.

The French variety is next in order of effectiveness and its slightly larger size may make up to a certain extent for its lesser ability to produce lubricant material.

The German variety thougn larger still, is in my opinion, distinctly deficient in both respects.

Far superior to any of these, however, in efficiency as a laxative are the seeds of another Plantago, variously termed the Plantago Loefflingii, Plantago Decumbens, Plantago Ispaghula, and Plantago Ovate. The exact botanical identification of this Plantago seed has not as yet been determined, so far as we know, but, because of its close similarity to psyllium seed in appearance, properties and use, it has become known as blonde psyllium. This seed grows in India and has a much higher mucilaginous content than any of the other Plantago seeds such as the Spanish, French and German psyllium seeds. Its bulk, too, is greater than the Spanish and French psyllium. I have seen German psyllium as large, but the average is slightly smaller than the average Indian Plantago seed, and as stated before, the lubricant substance of the latter is enormously greater. These superior physical properties of the Indian seed might easily explain its greater effectiveness as a laxative, but I am not altogether convinced as to this. There seems to be some active principle liberated which has a mild laxative action of its own. In this I may be mistaken since the effect may be entirely due to the heavy charge of mucilaginous substance these seeds carry, but their astounding greater efficiency as a laxative has led me to this surmise. I am at present conducting some research with equal quantities of the dried mucilage of the various species which should throw some light on this point.

The clinical tests employed in determining the relative merits of the Plantago sees mentioned were, aside from technical details, briefly these: Selected cases of functional constipation were placed upon identical diets for three days and the frequency, quantity and character of defecation noted. Then seeds of each variety were administered in an identical dose and manner for three days. This was followed by an interval of three days in which no seed of any kind was given. After this period of rest another variety of Plantago seed was given. The object of the rest period was to allow the complete elimination of the previously ingested seed. Water ingestion was kept as nearly constant as possible. Powdered charcoal was given at the beginning of the first test; a carmine colored powder at the beginning of the second. These two test powders were alternated for convenience in checking up on intestinal motility and excretion.

The following suggestions in judging relative merits of varieties of Plantago seed may prove of value: No sample of seed should be employed unless it is physically clean and potent. By this is meant that the seed should be cleansed of all detritus such as grit, broken snail shells, twigs and other miscellaneous debris. Moreover, the seed should be tested as to its mucilaginous content to make certain that no "spoiled" seed is used since any clinical test employing such seed is obviously unfair.

It is well to bear in mind that the various Plantago seeds are not a certain remedy for every case of constipation without respect to cause and that they are quite capable of harm when inadvisedly used. Certainly they should not be employed in cases known to suffer from ulcerous conditions in the stomach or intestine. Similarly, in cases of intestinal or rectal disease recently operated upon, the seed may lodge in the wound surface, become imbedded there and give rise to the same reaction that any foreign body would. Properly employed, the Plantago seeds mentioned previously are valuable therapeutic agents—improperly employed, they become a potential source of trouble. As a final admonition, I mention the fact that without the drinking of sufficient water, any of the seeds of this species might better remain on the druggist's shelf since neither the seeds nor the patient's bowels have the opportunity of acting as they should. I have seen a number of cases in which the seeds were impacted in the rectum simply because the patient took them too liberally and took water too sparingly.

My conclusion from an experience dating back to their early use in this country as a laxative is that the seeds discussed here have a great and undeniable therapeutic value. The most efficient variety of these Plantago seeds, judged by its clinical action, is the so-called blonde psyllium of India. The relatively greater laxative action of the blonde seed is due partly to its greater bulk, partly to its much greater mucilaginous content, and possibly to some active principle not yet defined.

Strophanthus Gratus

By M. Techow*

VARIOUS Strophanthus Specimen grow under the tropical sun of Central Africa, the natives preparing "arrow-poison" from them. Seeds from Strophanthus plants have been imported into Europe since the latter half of the last century for preparation of heart-tonics. The active principle is contained in a few specimen of the plant only, viz: Strophanthus hispidus, Strophanthus gratus, and Strophanthus Kombé. In the beginning the seeds of the Kombé and hispidus were imported only and served to prepare the well known Tincture of Strophanthus. It should be noted that the efficacy of this tincture was very uncertain, often being entirely absent. The physician was never certain what dosage to use. The reason for the uncertainty was found to be adulterated seed. The seeds of Strophanthus hispidus and Strophanthus Kombé bear striking resemblance to seeds of other worthless specimens. Troublesome anatomic and morphologic examinations finally led to identification of the genuine seed. The identical outward appearance of the different seeds was the reason for adulteration in the country of origin, made partly on purpose, and partly erroneously. The seed of Strophanthus Kombé, which arrived in Europe and abroad was in most cases a botanically indiscernible blend of seeds. Any tincture manufactured from such seed will, of course, not give a product of uniform pharmacodynamic value. At the beginning of the twentieth century the seed of Strophanthus gratus first came to Europe. This powerful seed is the only one the appearance of which can be easily distinguished from other specimens. Hence possible adulterations can be recognized promptly. Furthermore, the plant Strophanthus gratus is cultivated in African plantations, while the other varieties only grow wild. Shipments received from African plantations in other words give the

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guarantee of a 100 per cent. pure drug. A really pure Kombé seed is even nowadays fairly difficult to obtain. Strophanthus gratus should by all means be granted preference over other specimens.

Chemical and pharmacological investigations have shown a glycoside to be the active principle of Strophanthus. This glycoside given the name of Strophantine or Quabaine. The different varieties of Strophantine, however, are not congruent but are slightly different in their chemical structure. During the research work for the isolation of the active principles, physical differences were also observed. The Kombé-Strophantine has an amorphous character, for instance, while the gratus-Strophantine is obtained in crystalized and therefore guaranteed C. P. form. The chemical formula is $3_{60}H_{40}O_{12}$ plus $9H_2O$. The efficiency is about 50 per cent. higher than that of the amorphous Kombe-Strophantine.

Only the crystallized gratus-Strophantine gives in its solutions full certainty of exact and correct dosage. Consequently this product is used for the titration of the other cardiacal Strophanthus and Digitalis Glycosides. Gratus Strophantine only gives the guarantee of a regular effect. However, it has still further advantages. It does not for instance contract the coronary-arteries but rather enlarges them. It does not cause haemolysis; it remains if applied internally almost unchanged and does not cause stomach trouble. If correctly applied no culmuative action arises.

Prof. Heffter calls gratus Strophantine an extraordinary addition to the number of modern pharmaceutical products. Prof. Thoms recommends to substitute the gratus-Strophantine for the other Strophantines as the efficacy of the latter is uncertain and irregular, and to make exclusive therapeutic use of the former. As a resume it can be said that crystallized gratus Strophantine must be considered as the absolutely reliable preparation. Its properties are: chemical purity, uniformity of quality, exact dosage, regularity of effect, insignificant by-effects and almost no cummulation.

Abbott Colors Metaphen

Abbott Laboratories, producers of Metaphen, an effective germicide, have recently prepared a special form of this preparation for skin disinfection as a skin disinfectant. The product is a solution of Metaphen in alcohol, acetone, and water.

The fact that a color quite often accompanies a skin disinfectant, such as in the case of the commonly employed Tincture Iodine, U. S. P., and that this stain is recognized as an advantage, although it readily might be considered a disadvantage, has been recognized by Abbott. Therefore, Tincture Metaphen is tinted to give a brown stain. The stain, on the other hand is a most convenient one, as it may be removed from bed linens by washing with soap and water.

Psyllium Seed Display

Kirby-Wrede Company, New York, have used enlargements of Drug Markets articles on Psyllium seed to aid in the merchandising of their packaged goods at retail

One of the attractive booths at the recent Chemical Exposition was that of the Spring Stopper Co.

Therapeutic Novelties

By Dr. R. L. Mayer

VERY early, long before there was such a thing as a School of Medicine, the medicine men of the most varied races and peoples knew, that certain illnesses could be cured by other illnesses. They observed, that long-enduring, chronic ills of the internal organs disappeared quickly and even suddenly, when inflammatory or irritating processes were engendered in the skin, and they assumed that the "bad juices" were drawn off by the latter and thus could flow out of the body. What was more obvious, therefore, than to produce such inflammations and irritations in an artificial manner! Thus a hair was introduced into the skin through a wrinkle and caused suppuration. Then again a seed or any other similar product would be placed within the cut in the skin with the same result. Or else an easily burnable substance was applied to the diseased part and ignited.

All of these methods have been abandoned within the last hundred years, but they are still retained by "simpler" people. The best known of the old Grecian physicians, who were particularly observant, Hippocrates, recommended the use of a red hot iron in the treatment of suppurating wounds. Only a few years ago the Berlin surgeon, Bier urgently advised the adoption of the red hot iron treatment in many internal diseases and thus a method, which was used by the ancient physicians thousands of years ago, was adopted by modern medicine. The only difference between the method used today and that used in ancient times is of technical nature. Today electricity is used for heating the red hot iron.

Just as in the case of festering wounds, so in the case of certain diseases it was seen that cures could be effected by means of febrile conditions. Inasmuch as the curing of the disease often begins under a condition of high fever and directly thereafter, one said that "the fever heals". Thus Parmenides wrote 500 years B. C.: "Give me the power to produce fever, and I will heal all sicknesses". Ruphos of Ephesus said that fever was a powerful healing force. This was about the year 100 A. D. Galen (131 to 200 A. D.) reported on the cure of insanity by malarial fever. The first systematic observations that were conducted on this subject began about the middle of the nineteenth century. Thus in the year 1848, Koester observed twenty-four insane people in the city of Bonn, Germany, who had become ill with malarial fever. Seven of these insane people were cured of their mental disease and seven more were materially helped. Similar observations, in which the patients were also afflicted with intermittent fever, have been reported in various articles. Mention must, however, be made of the fact in this connection, that all of the cases were ones in which the patient had contracted the febrile disease in a natural manner, and amongst these febrile diseases may be mentioned malarial fever, intermittent fever, pneumonia (which is also considered at the present time as a specific against asthma), smallpox, fever caused by wounds, etc.

(The author traces the development of the treatment of certain diseases by artificial febrile conditions induced in the body by means of serums, chemicals, etc. Only brief excerpts of the statements made in the original article will be given here. Editor).

O. Glaser in 1903 used injections of turpentine to produce such febrile conditions. Donath used sodium nucleinate for the same purpose a little later. The febrile conditions thus obtained were not very powerful. In 1917 Wagner-Jauregg injected nine paralytics with the germs of malaria, using the blood from other patients that were afflicted with this disease. Four of the paralytics were helped very much by this treatment; one died. Only two remained unhelped in any way whatsoever. The results were surprising and the treatment was adopted worldwide. The only trouble with it was that the percentage of fatalities was rather high, namely eight to ten per cent.

Later the treatment that was used in the case of paralytics was also applied to other chronic diseases, such as chronic gonorrhea and the like. The results obtained have not been very good. In 1925 the preparation, known as pyrifer, was introduced on the market by the Physiologisch-Chemischen Laboratorium Hugo Rosenberg, Freiburg i.B., Germany. This was the first preparation recommended for use in febrile treatment in the place of malarial germs.

Products For Use In X-Ray Photography

Immediately after the discovery of ray photography, the idea was advanced by Neusser, that it would be possible to use bismuth, which had been used for a long time in the form of bismuth subnitrate for the treatment of certain diseases of the stomach and the intestines, for rendering the stomach and the intestinal canal visible. It was in 1904 that Rieder introduced the bismuth process which was first used in X-ray diagnosis of diseases and conditions of the alimentary canal. Later the expensive and the always dangerous bismuth, due to the fact that nitrite poisoning frequently took place in the intestinal canal due to the reduction of the nitrate to the nitrite by the bacteria in the intestines, was replaced by the cheaper barium sulphate. This insoluble and hence non-poisonous salt must, however, not be used, when it is necessary to render visible regions of the body, from which the reagent cannot be removed again in a natural manner, that is without reaching the circulation; also for body cavities, such as the abdomen and the chest cavities, the cavity of the kidneys and of the vertebrata-column, the gall bladder, urogenital system as well as for blood vessels. A substance, which is to be used for this purpose, must be soluble and perfectly non-poisonous; it must be excretable through the kidneys without causing any irritation in the organ, and at the same time it must possess a high power of absorbing X-rays.

The absorption of X-rays by a substance depends on two factors. First there is the atomic weight of the element and second the specific gravity of the substance itself. Hence the power of absorption is quite generally independent of the chemical properties of the substance, and it is also immaterial whether the substance, that is selected, is a metallic compound or not. The coefficient of absorption rises approximately with the fourth power of the atomic weight. Hence the substances that have been mentioned above, namely barium and bismuth, as well as iodine, bromine namely barium and bismuth, as well as iodine, bromine and silver, and also the rare earths, are particularly suitable for this purpose. In making a selection of these substances, one point must be borne in mind above all others, namely, that the substance must come into contact with the living organism, and hence many substances, which may be perfectly satisfactory for the purpose, as far as their physical properties are concerned, must be rejected for the reason that they are harmful to the organism.

Alkali iodides and bromides, which can be introduced externally through the urether in aqueous solutions of any desirable concentration, have been used for preparing the urinary organs for X-ray photography. However, when these substances are used, it has sometimes been found that iodine and bromine intoxication takes place, and also super-sensitivity phenomena in the cases of certain people, who have an iodine or bromine idiocyncrasy, due to the absorption of the iodine or bromine into the system. Attempts have accordingly been made to combine these elements in the form of easily soluble organic substances, which have the property of not allowing the iodine or bromi ne to split off in the form of free ions and thus exert their harmful action. By the introduction of iodine and bromine into any organic substance, the latter becomes an X-ray absorbing body and the degree with which this power is exerted by these organic substances corresponds to the amount of iodine or bromine contained in them.

Such a substance, which contains a large proportion of iodine, is the preparation called Iodipin, which is made by the firm, E. Merck, Darmstadt, Germany. This is an iodized fatty oil, whose iodine content can be regulated at will. It has been found to be a very useful product in the preparation of the respiratory passages of the lungs and of the spinal cord canal for taking X-ray photographs. Iodipin comes on the market containing ten, twenty, forty per cent. of iodine as well as lower percentages. In this way oils of different specific gravity are obtained, which oils are partly lighter than water and therefore rise in the spinal cord canal and make visible obstructions, tumors, indentations, etc. They are partly heavier than water and hence sink to the bottom. Merck & Co. have recently brought out a new form of Iodipin, which is thinly viscous and which consists of the iodized ethyl ester of fatty acids. The French preparation, known by the name Lipodol, has the same composition as the old Lipoiodine.

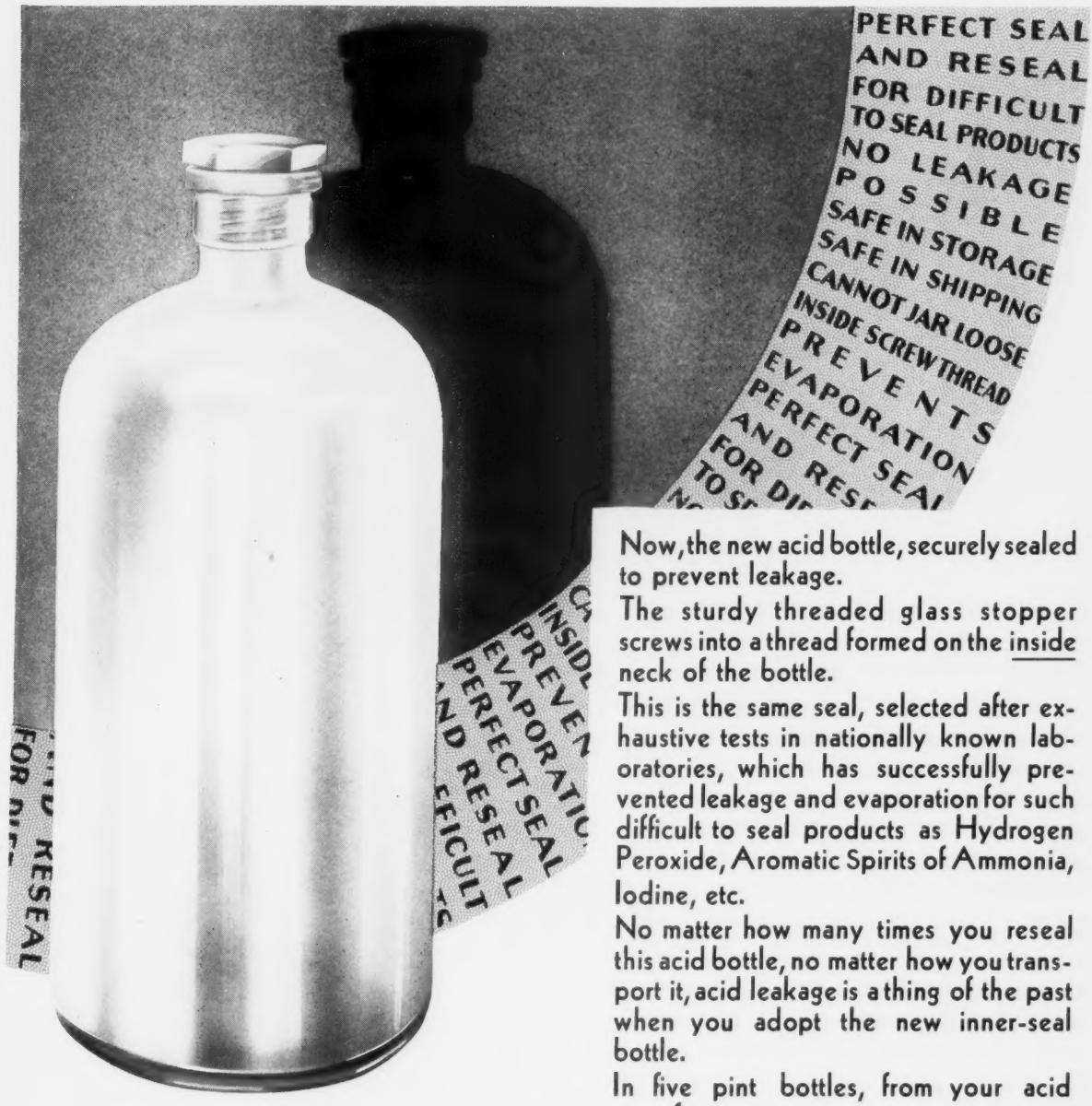
All animal and vegetable oils can of course be iodized and can be suitable for this purpose from a theoretical viewpoint, but this is not so practically. As a general rule the vegetable oils appear, according to Putnam (Journal of the American Medical Association, Volume 87, year 1926, page 1102), to be less irritating than the animal oils. Furthermore, there does not seem to be much difference in the behavior of the iodated and brominated oils. Many authorities prefer the brominated oils.

These fatty products also have their special field. They are accordingly not suited for preparing the kidneys, gall bladder and the veins for X-ray photography. In these cases an easily soluble substance must be used, which is either directly introduced into the blood stream or can be administered by the mouth. The products that are suitable for this purpose are quite numerous and of these there may be mentioned Tetragnoste, made by E. Merck, Abrodil, made by the I. G. Farbenindustrie A. G. and Uroselectan, made by Schering-Kahlbaum A. G., Berlin, G. Germany.

The preparations, that are called by the name Tetragnoste, are the sodium salts of iodated or brominated phenolphthalein. They are administered intravenously as well as through the mouth. After a period of several hours has passed, the concentration of these media is so high in the gall bladder, that the

(Continued on page 481)

A New
ACID BOTTLE



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On these pages are presented a few views of our factory at Elizabeth, N. J.

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Its watchword is —*the knowledge*
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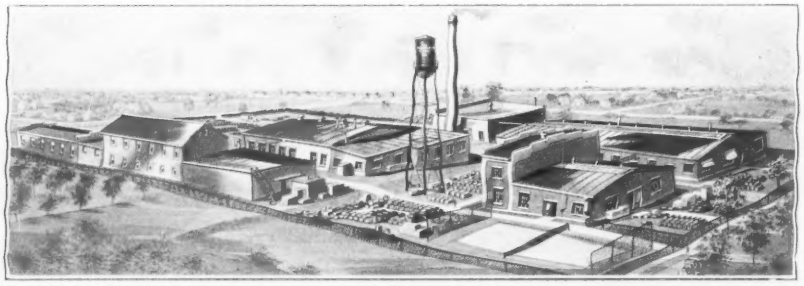
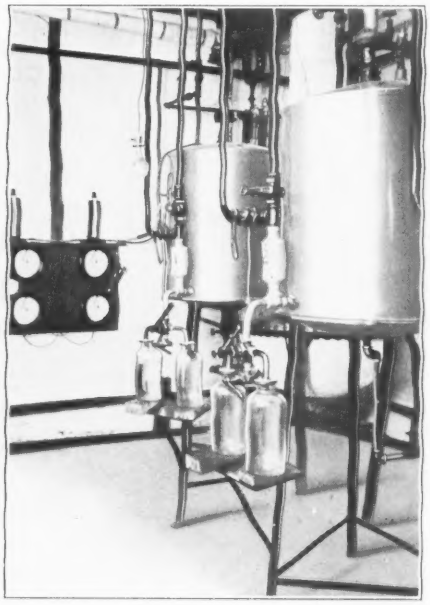
—*the desire*
to make the best

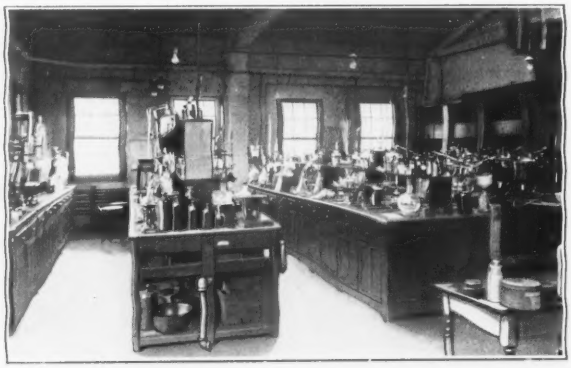
Its products include:

Alpha Ionone	Citronellal	Iso Eugenol	Methyl Para Cresol
Amyl Cinnamic Aldehyde	Dimethylacetophenone	Lemonal	Methyl Phenyl Acetate
Amyl Salicylate	Ethyl Benzoate	Linalyl Acetate	Oleo Resins
Benzophenone	Ethyl Phenyl Acetate	Linalool	Para Cresol Acetate
Benzyl Acetate	Eugenol	Methyl Acetophenone	Para Cresol Phenylacetate
Benzyl Alcohol	Geraniol	Methyl Benzoate	Phenyl Acetic Acid
Benzyl Benzoate	Hydroxycitronellal	Methyl Cinnamate	Phenyl Ethyl Acetate
Bigarol	Irone Extra Pure (Ionone)	Methyl Eugenol	Phenyl Ethyl Alcohol
Citral	Iso Butyl Benzoate	Methyl Ionone	Phenyl Ethyl Cinnamate
Citronellyl Acetate	Iso Butyl Phenyl Acetate	Methyl Iso Eugenol	Rhodinol

Its success is beyond question.







Research and Analytical Laboratory

Units in the Distillation Department showing vacuum indicator and electric temperature control. Every piece of apparatus that uses heat is equipped with this "tell-tale" which makes a permanent written record 24 hours a day.

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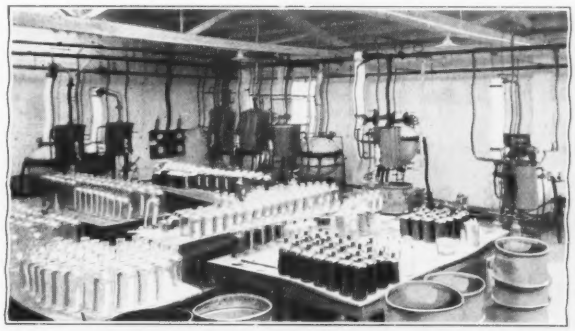
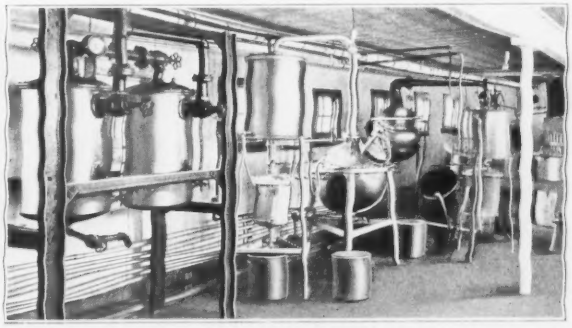
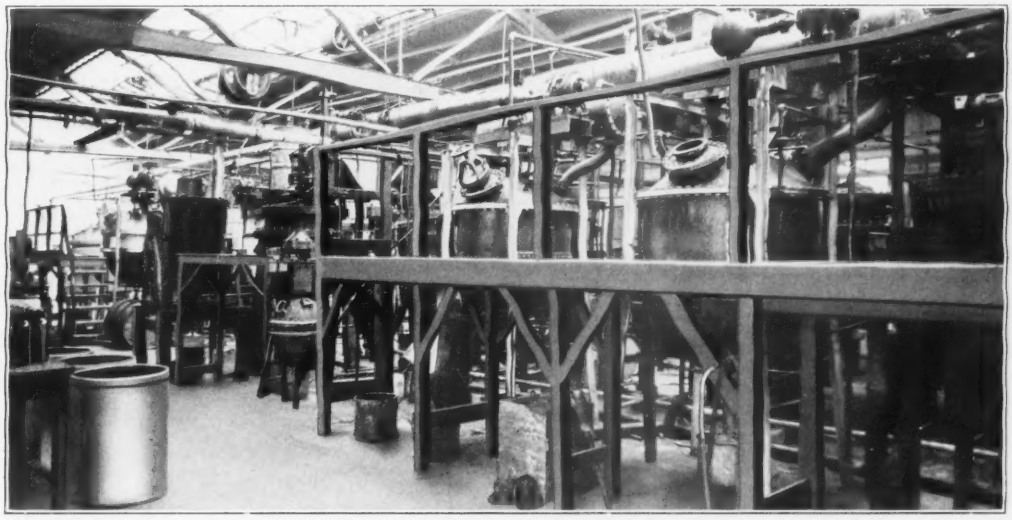


View of one corner of the Distillation Dept.



Section of True Fruit Flavor Manufacturing Dept.

View of Reaction Department



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This product is pure—odorless—practically tasteless. It is free running and immune from deteriorating influences over long periods of time. It can be fed direct to tableting machines with dry, loose starch. This improved product is recommended over all other forms.

Pharmaceutical manufacturers now using these crystals are maintaining exceptionally high standards of quality.

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Acetyl Salicylic Acid, Crystals, U. S. P.

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Acetyl Salicylic Acid, Granulation 10% Starch (White, Pink and Green)

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Salol, U. S. P.

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Benzoic Acid, U. S. P.
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Chloroform, U. S. P.
Cinchophen, U. S. P.
Ferric Chloride, U. S. P., Solution or Crystals
Methyl Salicylate, U. S. P.
Minor Bromides
Minor Salicylates
Phenol, U. S. P.
Salicylic Acid, U. S. P.
Sodium Benzoate, U. S. P.
Sodium Salicylate, U. S. P.
Strontium Bromide, U. S. P. IX.

THE DOW CHEMICAL COMPANY
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Aromatic Compositions

By G. Karaivanoff

Mr. Karaivanoff gives some observations on the development of this important part of the perfume industry.

EVER since ancient times people have used, and, in consequence, prepared the perfumes that have been mentioned throughout history in connection with ablutions, profane feasts or religious services. These perfumes, extracted from plants or animals, had a natural origin. In fact, in the very tissues of certain animals and certain plants one finds that perfumes are produced. The perfumes found in the cells are extracted either by means of distillation, maceration, dissolution, etc., but for some this long line of processes proved to be onerous, and consequently a number of chemists worked day and night to find out the means of producing synthetic perfumes or aromatics. It was hoped that the discovery of synthetics would lower the prices by a great deal.

Up to the middle of the last century the research work done did not produce appreciable results, for the reason that this research had been carried on without any method, and because of the fact that the proper tools were, in many instances, lacking. It is only toward the year 1876 that really tangible results could be noted. Later on the chemists studied the composition of natural perfumes, in order to guide them in their research work. With the development of organic chemistry came the greatest progress in the branch of synthetic aromatics, and the synthetic perfume business grew side by side with the growth of the coloring matter industry.

In making an analytical study of the natural perfumes it was found out that the products endowed with an agreeable odor enter into the category of hydrocarbons, cetones, aldehydes, ethers, alcohols. Thus pinene, camphene, limonene, etc., enter into the composition of oils of turpentine, lavender, orange; the aldehydes such as citral, citronellal, benzaldehyde, enter into the composition of oils of lemon, citronelle, bitter almond; the alcohols, such as geraniol, linalol, menthol, are the aromatic bases of oils of geranium, bergamot, mint, etc.; the cetones, such as menthone, irone, ionone, etc., are the constituents of oils of cumin, mint, orris, etc.

The desire to synthesize the products mentioned above was the starting point for the development of a new branch of organic chemistry. The names of Wallach, Henning, etc., are closely allied to the work done, and their genius brought about the possibility of discovering some of nature's own secrets, thus placing at the disposition of man further power to help himself on the road to progress.

The reaction of Grignard, as well as hydrogenation and dehydrogenation completed this cycle of savant syntheses, and which will remain as classical examples of the liaison between theory and practice.

Several theories have been advanced to explain the production of perfumes, among which one of the most interesting is that of the *osmophores* and *osmogenes*. According to this theory, the odors which one perceives are due to three factors: (1) the existence of a special or radical nucleus in the formula of the compound which is called osmogène; (2) the presence of

special groups called osmophores; (3) the manner in which these groups are allied. The atomical groupings of the osmophores and their disposition give that specific finesse of odor which one calls the *nuance*, or delicate difference, of each perfume.

Even though this theory remains *impuissant* to explain all of the facts, it exercises, and always has exercised, a beneficial influence. Thus, in trying to transform the structure of the osmogènes, the disposition of the osmophores, etc., there have been obtained interesting isomeric results from the scientific point of view and useful in the practice of the perfume business.

Following in this line of reasoning there have been discovered a large number of aromatic products. It was in this way that a group of products was found among synthetic aromatics which, according to their perfume recall more or less the odor of certain natural essential oils. For instance, the following: ethyl benzoate; amyl benzoate; benzyl acetate; bornyl acetate; ionone; artificial musk; vanillin; etc. Another group of synthetic aromatics, such as nitrobenzol, nerolin, etc., having nothing to correspond exactly with them in natural perfumes, but in mixing the compounds of the two groups, there have been obtained perfume and cosmetic formulae.

It is equally true that through the development of synthetics there was obtained another category of compounds which are employed in the perfume industry as fixatives. These compounds have a slight specific odor which does not change that of the prepared perfume, but which softens the tone of this latter product and renders it more tenacious at the same time. The number of artificial fixatives is growing day after day, the list being very long, and with little chance of its remaining stationary for some time to come. Among the better known fixatives are the following: artificial musks—ketone, ambrette, xylene; then there are: coumarin, heliotropin, crystallized floranal; the crystallized ethers of isoeugenol; benzyl acetate; benzylisoeugenol; phynylacetates; phenylacetic ethers crystallized; cinnamic ethers; ethyl alcohols; methyl alcohols; etc.; etc.

Since the discovery of these various products, the preparation of aromatic compositions has been greatly simplified, particularly since it has been possible to establish by various means the characteristic bases, which, introduced into certain compositions, communicate their aromatic characteristics. Thus benzyl acetate, terpineol and hydroxycitronellal are the base for jasmine; hydroxycitronellal and terpineol are the base of lily of the valley; geraniol and citronellol are the base of rose; ionine of the violet. Furthermore, terpineol is the base of an entire series of aromatic compositions, like lilac, gardenia, syringa, etc.

Whatever one may say about the matter, it must be admitted that today the chemist has succeeded in producing synthetic aromatics which are faithful to the odor of the natural perfume. Thus today there is being produced a perfect set of reproductions of lemon and orange oil, for example. In fact, it is very difficult for inexperienced persons to distinguish between the natural oil and the artificial, particularly in view of the fact that the two products demonstrate physical and chemical constants that are practically identical. Furthermore, one of the main concerns of the chemist is to obtain artificial products of which the constants do not vary too widely from those of the corresponding natural products and to produce something which will baffle any analysis of the nature of the perfumes.

The formulae calling for the use of synthetic aromatics are varied, and each firm has its own, which it keeps secret. We can, however, make mention of several typical ones, in which the amounts specified may be changed so as to produce whatever result the individual manufacturing perfumer desires:

Acacia Oil

Anisic aldehyde	825 gr.
Phenylethyl alcohol	50 cc.
Phenylacetic acid	10 gr.
Phenylacetic aldehyde	5 gr.
Vanillin	40 gr.
Heliotropin	20 gr.
Jasmine, essential oil of (natural)	10 cc.
Neroli	5 cc.
Mimosa, essential oil of (natural)	20 cc.
Civet, artificial, crystallized	10 gr.
Musk, ambrette	10 gr.

Artificial Bergamot Oil

Bergamot, essential oil of (natural)	150 cc.
Terpinyl acetate	500 cc.
Lynalyl acetate	250 cc.
Methyl anthranilate	90 gr.
Aldehyde C^{10} (decyl)	10 gr.

Lily of the Valley

Linalol	300 cc.
Hydroxycitronellal	395 cc.
Phenylethyl alcohol	100 cc.
Jasmine, artificial oil of	25 cc.
Lily of the valley, artificial oil of	50 cc.
Iris, essential oil of (natural)	10 cc.
Ylang-ylang, essential oil of (natural)	15 cc.
Jasmine, essential oil of (natural)	15 cc.
Mimosa, essential oil of (absolute)	10 cc.
Lily of the valley, essential oil of (absolute)	60 cc.
Alcohol (nonyl)	10 gr.
Aldehyde C^{12}	1 gr.
Aldehyde C^{9} (nonyl)	4 gr.
Aldehyde C^{16}	0 gr. 5
Phenylacetic aldehyde	0 gr. 5

(Continued on page 471)

America's Perfumes

By F. A. Kertess

Mr. Kertess makes a plea for the American perfume industry to take up further steps of development.

AMERICA'S perfume industry seems to have out-grown the first stage of its development. Up to the present time it has confined itself almost wholly to endeavors to match and copy foreign products. It cannot enter into the second, and more successful and profitable period of its existence until it really sets itself to the task of creative work and it is to that objective that the leaders of the industry are already directing the major portion of their efforts.

Perhaps the first step in this movement should be towards a reorganization of the supply industry so that the manufacturer may devote more of his time to original research work.

Upon examination, the supply industry naturally falls into four divisions—manufacturers of aromatic chemicals, manufacturers of basic specialties, manufacturers of compounds, and representatives of foreign producers of aromatic chemicals and essential oils. If the supply industry could be definitely alinged in these four distinct groups, each one specializing in its own field, a greater efficiency would logically result, both from the point of view of capital and profiits and from that of scientific research.

The domestic manufacturer of aromatic chemicals could then turn his full attention to the development of a line which could be made in this country to best advantage. The manufacturer of basic specialties could build up his products on the very best items selected from among domestic and foreign chemicals, buying from specialized sources of supply. The maker of compounds in turn, would have a still wider range from which to pick his ingredients by taking advantage of the experience of the other supplying sources. The agent for foreign natural oils and essential oils would be able to use his capital to better advantage than embarking in research experiments.

The perfume and cosmetic industry could then devote all its time and efforts, all its capital and facilities to the finished product, to a working field entirely its own and one distinctly different from the making of basic raw materials.

The facilities of the average toilet goods manufacturer are more or less limited when it comes to testing and conducting experimental work on perfume materials. On the other hand, the dealer or supplier of essential oils possesses a fully equipped research laboratory for the testing of various oils and at the same time has a wide range of essential oils and aromatic chemicals with which to experiment. Therefore, there is little doubt that most of the essential oil suppliers or dealers are in a better position to develop new and attractive perfume oils and bases than the toilet goods manufacturer. In addition, it should not be overlooked that the production of perfume bases not only requires considerable facilities but also means a great outlay of capital.

There are any number of reliable essential oil houses which specialize in perfumers' raw materials and bases. Furthermore, no reliable oil house would advise a customer that he is buying a straight chemical product if he were really obtaining a compound or blend. As time goes on, manufacturers of basic products and bases would no longer offer materials under a coined name but would supply them under a direct chemical title, leaving the coined names for the bases and compounds.

Every manufacturer of perfumes and toilet preparations can, of course, do his own compounding, if he provides his organization with the necessary facilities, a good perfumer, a research laboratory with the widest range of raw materials and sufficient capital with which to work.

(*Continued on page 487*)

A. M. T. A. Meeting

The thirty-seventh annual convention of the American Manufacturers of Toilet Articles was held at the Ambassador Hotel, New York, April 21, 22 and 23. The convention was opened with a luncheon Tuesday, April 21, at which various items of routine business were transacted. John U. Rebeer, vice-president of the J. Walter Thompson Co., talked on "Radio Advertising." In the evening the delegates attended a performance of "Grand Hotel" at the National Theatre, and returning to the hotel held a supper dance.

The Wednesday morning session, April 22, was featured by the report of W. L. Crounse, Washington representative. Mr. Crounse devoted considerable attention to the problems of industrial alcohol and the regulations thereof, explaining some of the changes in regulations. He also discussed the Capper-Kelly bill and stated that this legislation will be proposed again in the new Congress with the probability that it will be introduced in the Senate the next time rather than in the House. This session was followed by a luncheon.

In the afternoon of Wednesday, Eugene Forker, advertising director of the International Magazine Co. gave an address on "Advertising Censorship," in which he advocated careful censorship of statements as to the values and qualities of their products made in their advertising.

On Thursday, April 23, their was a luncheon at which the principal speaker was Dr. James M. Doran, United States Commissioner of Industrial Alcohol. He stated that the Treasury Department is now engaged in studying the permissive and regulatory phases and added that there are a great many things ahead to be done in regard to permissive activities. As time goes on, he stated, the industrial consumers of alcohol will find that the problems affecting them will be worked out staisfactorily all around and good results achieved. He stated that it is not the purpose of the bureau of industrial alcohol to boss the business man's affairs, but rather to apply the necessarily regulations so that all have equal opportunities and thereby to enable the user of industrial alcohol to help himself.

On Thursday night the association banquet was held at the Ambassador and, through the efforts of the

(*Continued on page 487*)

H. Henry Bertram, of A. B. Babcock & Company, re-elected President

E. B. Hurlburt, of J. B. Williams Company, reelected First Vice-president

Daniel J. Mulster, of Muhlens & Kropff, Inc., reelected Second Vice-president

Grasse vs. French Colonies

The disappearance of many cultures from Grasse is compensated for by recent cultivation in the French Colonies.

ONE of the reasons advanced for the gradual disappearance of many of the perfume-flower plants in the Grasse region is that of their successful cultivation in the French colonies, where the soil and climatic conditions are so favorable that production costs are greatly reduced. Furthermore, labor conditions in the colonies, although not perfect by any means, are much better than in the Grasse section, where it is very difficult at times to secure the required labor. And when such labor is available, the price demanded by it serves to absorb all of the samll profit that may be made on this or that culture. The following article on the perfume-flower situation in the French colonies appeared in a recent number of La Vie Agricole et Rurale, and has been translated for the benefit of readers of DRUG MARKETS.

Industrial experiments carried out in connection with the better known species of perfume-flower plants in Northern Africa date back about eighty years. In 1878, according to statistics, there were under cultivation more than 500 hectares. However, everything did not go along as was wished, particularly in the provinces of Oran and Constantine. In the department of Algiers, though, things went along more smoothly, due to concerted effort on the part of those concerned. This department still holds what might be termed almost a monopoly on certain cultures, although important progress is being made in Morocco and Tunisia, two colonies which will see a considerable development with respect to perfume-flower plants, it is predicted.

The *geranium rosat*, or rose geranium, the entire plant of which is odoriferous, dominates at the present time. The essential oil extracted from this culture has not the same perfume as the rose, but the quantity overrides the quality, and it is in the lower Mitidja that the distilling perfumers obtain their supplies. Alone in the localities of Arba, Ravigo, Chebli, Boufarik, Blida, la Chiffra, Mouzafaville, El Affroun, Oued el Alleug, the rose geranium is grown on an area covering 3,140 hectares. In 1927 the distillers of the oil in this region, grouped in a selling cooperative, delivered to trade and industry 45,854 kilograms of oil, more than half of the total Algerian production, which is given as 85,600 kilograms for the year 1927.

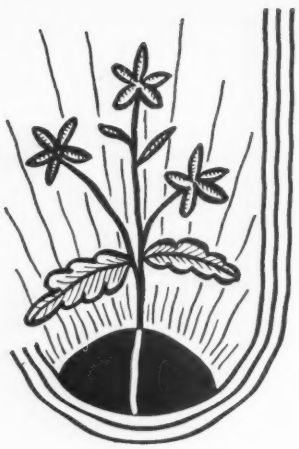
The oil is remunerative, and has been particularly so during the past few years. In 1914 a kilogram was worth 35 francs; in 1925, 1926, 1927, 170 francs on an average, attaining in February, 1929, 240 to 245 francs.

The department of Algiers is, therefore, a large source for the world's supply of rose geranium oil, sending this product especially to France, Germany, England and the United States.

Results attained so far have been excellent, comparatively speaking, although they would be much better still, on the whole, if certain obstacles were not met with constantly on the part of the growers, one of the main troubles being the question of hand labor. This condition has sometimes served to almost paralyze the efforts of some of the growers.

Cultivated up to the present time in Eastern Morocco only, the rose geranium is now seeing an extension into Western Morocco, where three cuttings per year may be obtained.

Immediately after the geranium comes the perfume rose, or *rose à parfum*, which reigns above all in Morocco. The Algerian natives formerly cultivated



JASMINE PERFUME BASES

JASMINE

SCHIMMEL & COMPANY

A perfect synthetic Jasmine, in which are present all the constituents which form the fragrance of the fresh blossom.

JASMINE NO. 2

A modern type Jasmine Base, most satisfactory for use in extracts, toilet waters and powders.

JASMILANE, Schimmel & Co.

Basically Amyl Cinnamic Aldehyde, but far superior to the usual commercial grades. Effective not only in Jasmine but all the floral bouquets as well. Its odor will remain unaltered even in slightly alkaline soaps, particularly so when used in combination with Schimmel Fixoresin.

JASMINE ABSOLUTE

F. B. (VOLATILE EXTRACTION)

Produced by Volatile Extraction, this is the finest natural Jasmine Essence possible of production.

JASMINE ENFLEURAGE, F. B.

Preferred by some perfumers because of its natural higher Indol content.

JASMINE CHASSIS, F. B.

A natural Jasmine product invaluable for powder and cream work. Will not discolor.

The following aromatic chemicals, manufactured by Schimmel & Company, for use in various Jasmine formulae are the very best obtainable:

- Linalyl Acetate 92%
- Benzyl Acetate
- Linalool
- Benzyl Alcohol
- Amyl Cinnamic Aldehyde
- Indol
- Decyl Aldehyde
- Geraniol
- Phenyl Acetic Acid
- Methyl Anthranilate

FRITZSCHE BROTHERS, Inc.

Proprietors of PARFUMERIES DE SEILLANS *Seillans, France*

78-84 Beekman Street New York, N. Y.

Sole Agents in U. S. and Canada for SCHIMMEL & COMPANY *Miltitz, (near Leipzig) Germany*

the *Rosa moschata*. The Europeans gave their preference to the *Rosa centifolia*. However, the experiments were not carried very far, and consequently the rose plantations of Algeria remain stationary.

In Morocco experiments have been undertaken at Meknes and at Marrakech. The rose tree which bears the name of this latter town dominates all the others. It is a shrub forming tufts 1 to 2 meters high, and the same in diameter, with semi-full flowers of a light pink or pale rose, striped or lined with yellow at the base of the petals. These shrubs produce, from the beginning of April to the last of May, 500 to 700 roses, weighing 1 kilogram to 1 kilogram 500 grams, whereas the roses of l'Hay and the roses of Grasse, according to experiments made by the agricultural service, gave per hectare, 2,800 kilograms of flowers. For these varieties there were required 7,270 to 8,835 kilograms to extract one kilogram of oil, and, under these circumstances, one is not astonished at the price attained by the product, less fine than that extracted from the Grasse rose, but superior by a great deal in strength to that given by the Bulgarian rose.

Essential oil of rose in 1923 brought 4,000 francs, approximately. But with distilling apparatus of the improved type, as compared with that used at Marrakech, the yield would be much larger.

There should be mentioned also the *bigaradier à fleurs*, at home in Algeria, Boufarik, and which gives the essential oil known under the name of neroli. One thousand kilograms of flowers give 1 kilogram of oil, and in 1927 Algeria exported 240 kilograms of this oil, valued at 720,000 francs.

Production in Tunisia is interesting: 100 kilograms of neroli oil annually, not to mention some 50,000 liters of orange flower water. The green bitter oranges, or bigarades, also furnish the dried rind, and the so-called essential oil bigarade.

It is in the neighborhood of Fez and Marrakech that one finds this tree in Morocco. The production is a variable, but there would be a decided development for the better if these trees were trimmed and taken care of.

The agriculturists of Algeria have undertaken the cultivation of lavender in the Sahel of Algiers, la Chiffa, at Miliana, as well as in certain sections of the departments of Constantine and Oran. Most favorable of all are the mountainous districts, where the yield in flowers may attain 2,500 kilograms per hectare, from which it is possible to obtain 20 to 25 kilograms of oil, with an average value of 200 francs per kilogram.

Experiments are being made with the introduction of lavender in Morocco. At Fez the experiments did not succeed. At Casablanca the plant disappeared, and at Rabat the development was very meager.

There are, however, other perfume-plants that can be successfully grown in Northern Africa.

For example, thyme, to which Morocco seems to be favorable. Jasmine, cultivated in Algeria over a long period of years by the natives, and which in Morocco sends out shoots that attain a height of 5 to 6 meters at times. The iris, mint, rue, eucalyptus, and above all marjoram, or origanum. There exist vast plantations in the vicinity of Sfax, which produce, according to the rains, 30,000 to 65,000 kilograms of dried leaves, sold in 1928 at prices ranging between 425 and 450 francs per 100 kilograms. The annual production varies between 500 to 700 tons.

In Morocco the culture of marjoram is as easy as in Tunisia, and as sure. In Chaouia, 40 hectares have been given over to this culture, and as irrigation is not required there, with the additional advantages of just the ordinary care, this culture should show real development on a profitable basis.

As will be seen, the development of the perfume-flower plant industry in Northern Africa is bound to be a steady one, that is in Algeria, Morocco, and Tunisia.

Aromatic Compositions

(Continued from page 466)

Artificial Oil Rose D'Orient

Geranium, terpeneless essential oil of	500 cc.
Rhodinol	300 cc.
Jasmine, artificial oil of	70 cc.
Nerol	20 cc.
Rose (oriental), essential oil of (natural)	80 cc.
Aldehyde C^9	10 gr.
Alcohol C^9	10 gr.
Methylphenylglycidate of ethyl	10 gr.

Another group of aromatic products which is widely used in the confectionery, pastry and beverage trades is constituted of artificial fruit essences. These products are obtained by simply mixing synthetics of certain categories together, and then sometimes adding a small amount of the natural oils or essences to reinforce the mixture.

The following formulae are very interesting, giving results that can be relied upon:

Pineapple

Alcohol, extra fine	1 liter
Amyl butyrate	100 gr.
Ehtyl butyrate	50 gr.
Glycerine, pure at 30°	35 gr.
Chloroform	10 gr.
Acetic aldehyde	10 gr.

Banana

Alcohol, extra fine	1 liter
Amyl acetate	190 gr.
Butyric ether	215 gr.

Synthetic perfumes, as well as the natural, enter into the composition of all industrial aromatic preparations, and they are being employed more and more every day. The growth of synthetic aromatics, particularly with the high prices of some of the natural oils, promises, therefore, to enjoy a steady development.

THE NEWPORT AROMATICS

for
Muguets

NEWPORT LINALOOL EXTRA

Clear and Pure

The Newport product excels
in sweetness and delicacy
now produced
in the
U. S. A.

Why not the best?

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Phone MONroe 2686

New York Office
260 West Broadway
Phone WAlker 5-6166

Philadelphia Office
437 East Allegheny Avenue
Phone REGent 1017

Indiana Hits Chain Stores

A graduating tax increasing with the number of units in the chain is declared constitutional by the Supreme Court of the United States, making it possible to tax chain stores out of business. This is the most far-reaching piece of legislation against chain stores that has been allowed to stand. The possibilities are too great to allow of accurate indications of the future but we have obtained some very interesting opinions.

A SEVERE blow has struck at the chain store in the decision of the U. S. Supreme Court which declares constitutional the law of Indiana increasing the tax upon units of a chain store orgaization as the number of units increases. The decision was by a vote of five to four, with Chief Justice Hughes and Justices Brandeis, Holmes, Roberts and Stone in favor of the majority opinion which was handed down by Justice Roberts. The dissenting opinion was written by Justice Sutherland, and concurred in by Justices Van Devanter, McReynolds and Butler.

The law as it stands in Indiana imposes a license fee of $3.00 on a single store, $10.00 per store for each additional store up to five, $15.00 for each additional store up to ten, $20.00 for each additional store up to twenty, and $25.00 for each additional store in excess of twenty.

The majority decision declared that discrimination in taxation is lawful. The court said:

"It is not the function of the court in cases like the present to consider the proprietary or justness of the tax, to seek for the motive or to criticize the public policy which prompted the adoption of the legislation. Our duty is to sustain the classification adopted by the legislature, if there are substantial differences between the occupations separately classified. Such differences need not be great.

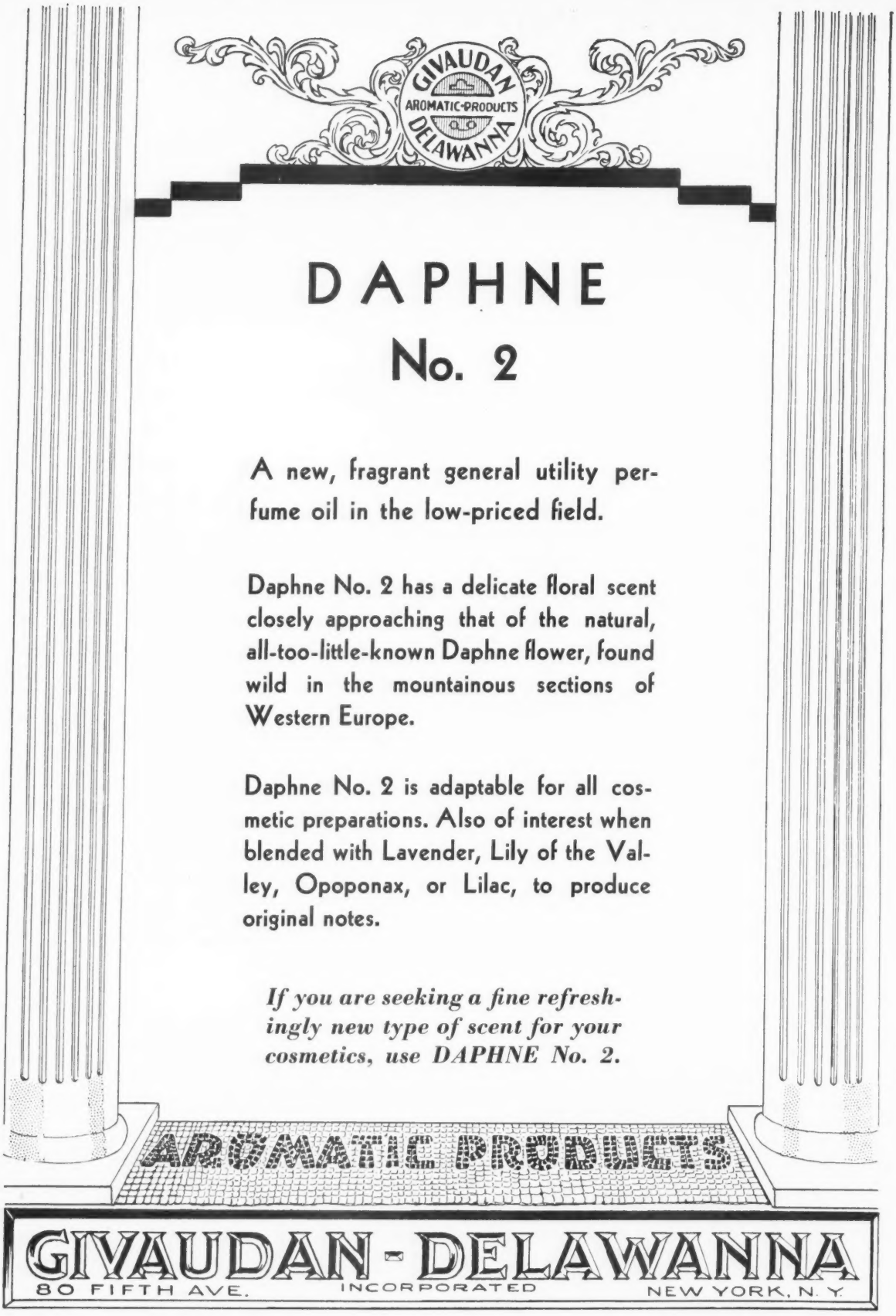
"The fact that a statute discriminates in favor of a certain class does not make it arbitrary, if the discrimination is founded upon a reasonable distinction. That there are differences and advantages in favor of the chain store is shown by the number of chain stores established and by their astonishing growth. More and more persons have found advantages in this method of merchandising and have, therefore, adopted it.

"The statute treats upon a similar basis all owners of chain stores similarly situated. This is all the constituiton requires."

Some opinions expressed in the trade indicate that it is too soon to clearly indicate just how far-reaching in its effects this law will be. But that there is great danger to the future of the chain store as a result of the decision is clearly stressed.

One manufacturer speaks as follows:

"There is no question that the power of totally destroying the chain store systems of the country lie in the application of the decision in the Indiana case. There is the distinct possibility of pressure being made upon legislatures to increase these taxes until the chain stores are taxed to death. However, it is most



DAPHNE
No. 2

A new, fragrant general utility perfume oil in the low-priced field.

Daphne No. 2 has a delicate floral scent closely approaching that of the natural, all-too-little-known Daphne flower, found wild in the mountainous sections of Western Europe.

Daphne No. 2 is adaptable for all cosmetic preparations. Also of interest when blended with Lavender, Lily of the Valley, Opoponax, or Lilac, to produce original notes.

If you are seeking a fine refreshingly new type of scent for your cosmetics, use DAPHNE No. 2.

AROMATIC PRODUCTS

GIVAUDAN - DELAWANNA

80 FIFTH AVE. INCORPORATED NEW YORK, N. Y.

unlikely that any such condition will come about. Rather would there be a tendency on the part of the legislatures of the various states to attempt to levy taxes to such an extent as would overcome some of the advantages of chain store merchandising such as discounts from mass buying, etc."

Another manufacturer tells us:

"The tax upon chain stores will be a good thing if it is not abused. But if an attempt is made in the legislatures of the various states to have taxes levied upon chain stores to such an extent that the inefficient independent retailer will be able to stay in business then it will mean that the recent progress in merchandising will be lost and the public will pay for this waste and inefficiency. Of course the public will benefit by buying at chain stores under such circumstances since the additional sums paid there will revert to them in the form of taxes."

Other opinions are to the effect that:

"This is the most serious blow that has been struck at the chain stores since the beginning of their existence. While it is not incorrect to say that such a tax can be used to the end that its amount will be fixed in some instances at a point that will offset the mass purchasing and other advantages of the chain stores, such an idea might not be behind the motive that is moving a particlar legislature into action at a particular time. There is nothing that will assure us that the passage of a bill by a state legislature taxing chain stores will be designed so as only offset the advantages of large scale operation and not permit the independents to again become inefficient. The agitation against chain stores in various communities might be the sole motivating factor. And if at the particular time that the bill comes before the legislature, the motivating spirit is destruction of chain stores, then the tax might easily be made exhorbitant and force some chains to cease operations in that particular state."

Another opinion states that:

"It would seem that the following through of this type of law to its logical conclusion might offset the need for any price maintenance legislation. If the independents are to be given the weapon of taxing chain store systems so as to bring them into line competitively, then there is no need to compel them by special legislation to maintain their retail prices. The payment of a high tax upon their units will force them to demand higher prices for their merchandise, since they must meet their expenses. I believe that the decision is indicative of the liberal viewpoint that is spreading throughout the country but I am unable to say whether or not the decision will aid the manufacturers in their business, off-hand I would say that it would not aid them."

Another manufacturer gives a totally different opinion:

"I believe that this is the most fundamental change that has taken place in drug trade merchandising in twenty years. For the past two decades the trend has been in the direction of mass production and mass merchandising. All retailing efforts have been worked out with this thought in mind. Now we meet a decision that upsets this whole theory and might easily swing the theory of merchandising back to the smaller unit. All experience in merchandising during the past two decades might prove of doubtful value if the Indiana law is extended throughout other states to the end that chain stores will be materially hampered in their expansion programs and even in the operation of their present organizations on the present scales."

Incorrect Vanilla Report

It has been called to the attention of DRUG MARKETS that a report made by the Department of Commerce regarding vanilla beans is open to serious dispute. The report was issued April 24, 1931, and is to the effect that beans in Mexico were selling at that time at $1.50 per pound for cuts, and $1.67 per pound for whole beans. An importer of beans in New York has gone on record with the Department stating:

"May we inform you that for the bulk of the crop our house has paid $2.80 per pound before taxes and export duties for the whole beans, and as high as $1.80 per pound for the cuts also before charges in Mexico."

This house goes on record further in taking the following exception to the report:

"Another amazing error is in figuring that the curer paid four pesos per thousand beans which Mr. Dawson states makes the cost four pesos per thousand cured. Actually the curer has paid an average of forty pesos per thousand beans yielding not more than an average of eight pounds per thousand beans. To this must be added the cost of the labor necessary in working these beans into condition which covers a six months period."

The Mexican vanilla bean market has been very firm, it is stated, and while such reports can not lower the prices that must be paid for beans, they will serve to give the buyer an incorrect impression of who is receiving the bulk of the money paid for the beans.

The Colgate-Palmolive-Peet Co. has purchased the Omega Chemical Co. of New York for approximately $3,000,000. The Omega Chemical Co. owns a controlling interest in Omega, Ltd., of London, and in the Societe Cadum of Paris and Societe Cadum Belge of Brussels. The Societe Cadum of Paris is one of the largest soap manufacturers in France. Part of the proceeds from the recent sale of preferred stock of Colgate-Palmolive-Peet Co. was used toward the above purchase.

S. I. Hoddeson, superintendent of the American Powder Company's plant at Maynard, Mass., has resigned his position. His plans for the future are indefinite.

Pulverizing Machinery Co., New York, has just issued a new revised catalogue describing the construction and applications of the "Mikro-Pulverizer." Copies specially prepared for users in the drug and toilet goods industry may be obtained upon application to the company at 30 Church street, that city.

ALCOHOL
AND
INDUSTRIAL CHEMICALS

THROUGH the sales organization of A. K. Hamilton, The Pennsylvania Sugar Company and the Franco-American Chemical Works are able to offer you a two-fold service on your purchases of industrial alcohol and other chemicals.

Our sales representatives listed below will be pleased to have you call on them for further information you may require regarding our products.

Buffalo, N. Y., G. C. Manson, 853 Washington Street

Chicago, Ill., Fred A. Jensen, 510 North Dearborn Street

Cincinnati, Ohio, B. H. Roettker, 1613 Union Central Building

Cleveland, Ohio, Henry L. Grund Co., 416 Buikley Building

Detroit, Mich., Baker & Collinson, 6545 Georgia Avenue

Detroit, Mich., E. K. Maskell, Curtis Building, 2842 West Grand Boulevard

Duluth, Minn., Pearling-Scott Co., 306 Palladio Building

Indianapolis, Ind., A. C. Bradley, 1002 New City Trust Building

Louisville, Ky., Lewis & Co., Inc., 226 North 15th Street

Milwaukee, Wis., K. D. Pierson, 86 Michigan Street

Minneapolis, Minn., Oscar J. Friend, 314 Plymouth Building

New England, P. A. Houghton, Inc., 176 Federal Street, Boston

Norfolk, Va., D. E. Taylor, 917 Water Street

Pittsburgh, Pa., Homer D. Butts, Grant Building

Rochester, N. Y., L. C. Watkins Co., King and Maple Streets

Philadelphia, Pa., Baker & Gaffney, 1052 Drexel Building

Toledo, Ohio, Frank H. Lutz Co., 218 Great Lakes Terminal Warehouse

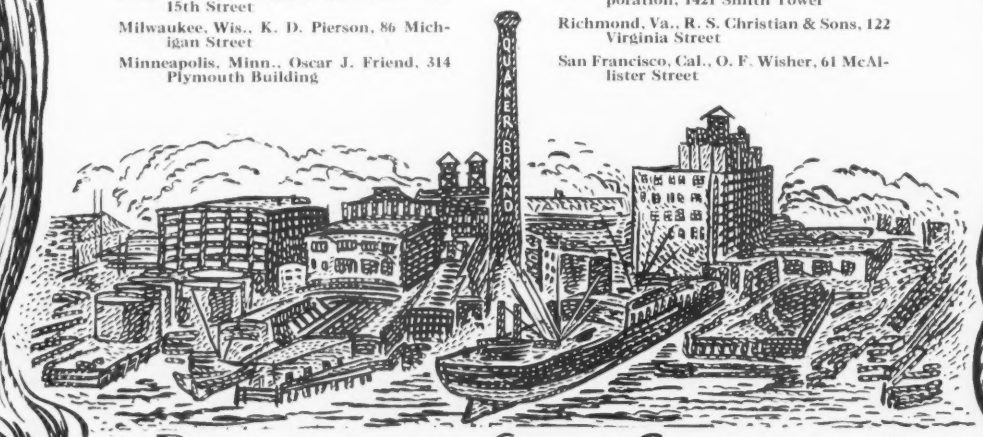
St. Louis, Mo., Warren T. Trask Co., 739 South Main Street

Los Angeles, Cal., A. J. Lynch & Co., 2143 Bay Street

Seattle, Wash., Paramount Products Corporation, 1421 Smith Tower

Richmond, Va., R. S. Christian & Sons, 122 Virginia Street

San Francisco, Cal., O. F. Wisher, 61 McAllister Street



Pennsylvania Sugar Company
and
Franco-American Chemical Works

SALES OFFICE

95 WALL STREET **A.K.Hamilton** NEW YORK, N.Y.

Sales representatives and warehouse stocks in principal cities

Distillery—Philadelphia, Pa. **Chemical Plant—Carlstadt, N. J.**

QUAKER Alcohol — FRANCO-AMERICAN STANDARDIZED CHEMICALS — QUAKER Alcohol — FRANCO-AMERICAN STANDARDIZED CHEMICALS — QUAKER Alcohol — FRANCO-AMERICAN STANDARDIZED CHEMICALS — QUAKER Alcohol — FRANCO-AMERICAN STANDARDIZED CHEMICALS — QUAKER Alcohol

Designing a Line For the Future

By Francis Chilson

Mr. Chilson tells of package design in a manner that allows for product expansion.

RECENTLY an article appeared in DRUG MARKETS on a well known cosmetic house whose line consists of two thousand items, three hundred of which are fair sellers and only ten good sellers. Knowing the line in question very well, it is a safe bet that seventy per cent. of the company's business is done on the ten good sellers. This condition is not limited to one cosmetic house alone; it is characteristic of that entire industry, and even more so of the pharmaceutical industry.

A house with which the writer was once connected had a line of fourteen hundred items of which six were good sellers, the remainder very poor. A glance at the price list of almost any large drug house will reveal, to anyone familiar with usage and market demand, more or less the same situation.

The condition is caused in the sales department through insufficient market analysis and inability to push new items once they are launched. Salesmen as a breed are extraordinarily prolific of ideas. Having given birth to their brain children to the blare of trumpets and the beating of tom-toms, they either allow them to grow with little care like Topsy, or else they enthusiastically nurture them for a while until it is seen that the new items cannot make the grade; then they abandon them to the buffeting of a harsh merchandising world and the fervent cursing of the plant manager whose schedules are complicated and costs skyrocketed by these waifs that require making in infinitesimal batches from time to time—and be it said, always at the wrong time.

It is a strange characteristic of merchandising that when a new item fails to make the grade, no one seems to have the courage to admit the failure and request the removal of the item from the line. Often such a removal would require the destruction of inventories of special bottles, labels, and cartons, amounting to a sum that the salesmanager would have difficulty in talking down. The usual method is to let the item drift on, sometimes for years, until the inventories peter out. And this, while it conceals the loss for the moment, is in the long run the most costly procedure, for the reason that money saved in inventories is lost intangibly through increased factory costs and loss motion on the part of salesmen, whose efforts are dispersed over a long line instead of being concentrated on a few good items.

Until merchandising becomes an exact science—and it probably never will—new items will continue to be added to every line to grow vigorously in the bright light of public approval or to wither by the wayside dusty, ignored and unwanted. This situation, of course, cannot be remedied by refusing to bring out new items until a market for them is absolutely assured. Every line must bring out new products from time to time to keep abreast of changing tastes. But the condition can be remedied through long range planning and standardized package design. By planning the growth of the line provision is made for flexibility so that it can be expanded without excessive investment in special inventories and special machinery; and contracted without great loss in packaging material inventories and without causing obsolescence of equipment bought for a special product.

For example, if a line carries salves and toilet creams, cough syrup, liniment and lotions; it will need to make for these products equipment of a certain kind. Now let us suppose that it is decided to add a

McKESSON & ROBBINS
INCORPORATED

BRIDGEPORT, CONN., U.S.A.

April 28, 1931

"will continue to add units"

...F. Brownell/MC

The F. J. Stokes Machine Company,
Olney Post Office,
Philadelphia, Pa.

Gentlemen:-

We are glad to advise you of the successful operation of the Drying Closet which we recently purchased from you. We have a number of chemicals to dry which have to be under rigid temperature control and we find that the Dryer we purchased from you insures this.

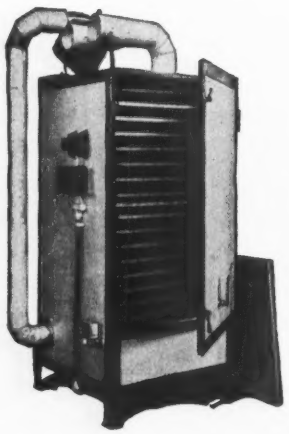
Our demands recently increased so that we purchased a second Dryer and our experience with both of them is such that we will continue to add units as our production increases.

Very truly yours,

MCKESSON & ROBBINS, INCORPORATED

H. F. Brownell

Superintendent



STOKES Electrically-heated Drying Closet (with automatic temperature control). Compact. Self-contained. Strong, rigid, fireproof. 16 trays. Rapid and uniform drying by hot air recirculated at high speed. Size 3 x 4 feet. Steam and gas-heated models available.

WE MANUFACTURE A COMPLETE LINE OF PHARMACEUTICAL EQUIPMENT

Tablet Making Machines	Coating and Polishing Pans
Vacuum Pans and Dryers	Water Stills
Molds of all Types	Drug Mills and Mixers
Powder Fillers	Alcohol Recovery Apparatus
Drying Closets	Tube and Jar Fillers
High Vacuum Pumps	Jacketed Kettles
Percolators	Bottle Washers
Capsule Fillers	Conveyors
Oscillating Granulators	Special Machinery

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Pharmaceutical Equipment Since 1895

5932 TABOR ROAD OLNEY P. O. PHILADELPHIA, PA.

clay product or a heavy paste to the line. That decision will require new equipment. It will require a mass mixer because heavy pastes cannot be made in equipment usually used for creams; it may require an ointment or roller mill to remove grittiness, and it may require—unless it is filled by hand—a special form of filling machine. Then if the jar is of a special size and design, it will necessitate not only heavy investment in jars alone, but also in caps, cartons and corrugated as well. In addition to these, special attachments for labeling and cartoning machines will have to be bought. To bring out a new item in a special container—let us say a two ounce jar for purposes of estimate—requires a commitment to purchase materials well up to five thousand dollars if quantity prices (1,000 gross) are obtained. Of course there is the expedient of paying exhorbitant prices for dies, molds and small special runs. In any event what happens when the item flops? The company has spent a lot of money, and may be committed to the purchase of five thousand dollars worth of materials, which it may not be able to consume before age discolors the cartons and corrosion dulls or attacks the caps. It is a fairly safe bet that one could inpsect the packaging material warehouse of almost any large organization and find special material grown venerable with age, which is carried on the books and used by fits and starts, simply because no one has had the courage to discontinue the item and throw the stuff out. Compact cases are particularly dangerous in this respect. Dies for a specially designed compact run up to three or four thousand dollars. If the item fails to make the grade, it invariably will be continued because no one feels equal to taking a four thousand dollar wallop in the pocketbook, not to mention the cost of the boxes that may already be made up. Meanwhile, the organization loses much through the divided efforts of salesmen trying to sell stuff that will not go.

As a basis for what follows we may safely state that the unusual package never maintains its popularity long (if, indeed, it ever achieves real popularity). The pity of bizarre packaging is that no one seems to have foresight enough to drop an unusual item as soon as public favor begins to wane. When you consider the products that are enjoying and have enjoyed for years steadily increasing demand, you will find invariably that the packages, while they are attractive, are usually very simple. Some of them, indeed, are actually plain. On the other hand the unusual product and the preparation, which by its special nature, could not possibly achieve a wide market, are frequently added to a line merely because some competitor carries them.

Because of unusual packages and limited usage products, the average large house is compelled to operate with a larger investment in inventories and equipment than would be the case if it confined its activities to merchandising a few good items (by "few" we mean a relative number, meaning in one case perhaps twenty products, and in another two hundred depending on the number of established good sellers.)

A standardization and concentration program should be worked out by the salesmanager, the factory manager and the general manager. Standard sizes and designs should be worked out for each classification of products in accordance with existing best sellers, and existing, or preferably, the best automatic equipment that can be obtained to produce them. Thereafter, every new package or product that is brought out must go into an existing standardized size and design of package. If the item fails later on, it may be eliminated from the line without the loss of anything but label and circular inventories, which rarely comprise much money. On the other hand if the item becomes a best seller a characteristic design can be worked out for it without changing the set up of existing equipment. If the products of the company are merchandised in cartons, arrangements can be made with the lithographer to carry a supply of blanks to be imprinted with the names of the new products. Afterward when the products have become established special cartons can be made up for them.

For example, let us suppose that a plain screw finish oblong in two, four and six ounce sizes has been selected as the standard bottle for liquids; and a one, two and six ounce round opal selected as standard for semi-liquid products. A carton for each size is designed and imprinted with directions and special data for existing best sellers only. Blanks are kept for new items and imprinted as required. A rule is then established as the policy of the company, that no new products will be added to the line that cannot be made in existing equipment and filled into some one of the standardized containers. Moreover, no item is added to the line unless its chances for success are carefully weighed beforehand by the committee. Once an item has been added, the only special purchase necessary is that for labels and circulars. Such an arrangement is particularly desirable when a business must make provision for fads as for instance in the cosmetic industry. The seasonal item can be added and the profit from it enjoyed while it is in vogue; and later it can be dropped without appreciable loss. The essential point is that inventories are kept at a minimum, operating costs are maintained at a low mass production level, equipment set-ups are never changed and no special equipment need be bought. Large houses having sufficient volume on each standard container size can, under the foregoing arrangement, have equipment built for each special size, which is, as every factory manager recognizes, the least troublesome and most efficient procedure in the long run.

Many salesmen will rebel against the idea of such uniformity in design. To them be it said that this uniformity applies only to the products that have not made the grade and to other new ones which will be

(Continued on page 488)

Abbott Pharmaceuticals » » Accurate even to LABELING

The Abbott Laboratories of Chicago realize that neatly labeled containers help sell their product. They know that their O & J Labeler can be depended on to affix every label accurately, because every operation is under positive control.

Abbott Laboratories depend on O&J Labeler for accurate cost cutting labeling » » »

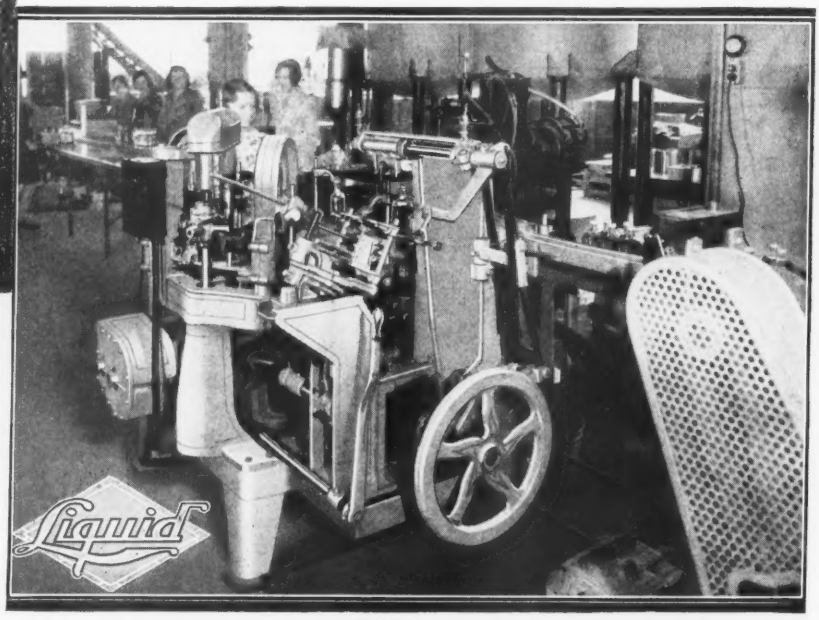
Accuracy is the watchword of pharmaceutical manufacturers. The package in which their pharmaceuticals are sold should also convey the impression of accuracy to the public.

Not only accuracy, but speed and economy are assured with O & J Labelers. The O & J "Duplex" has a rated capacity of 120 containers a minute. It can be adapted to almost every conceivable labeling job, and will do it at a considerable saving.

One pharmaceutical manufacturer is saving $1,390 a year with each machine. This is a saving of 49% over previous methods.

If you would like to see the complete report showing how these savings were effected, write for Survey L-13.

THE O & J LABELING MACHINE CO.
60 Ellsworth Street, Worcester, Mass.
Division of
THE LIQUID CARBONIC CORPORATION



Therapeutic Novelties

(*Continued from page 464*)

latter can be X-rayed and inflammatory processes as well as the formation of stones can be very well discerned. In certain cases unpleasant after-effects have been observed when these salts were administered, but they are probably due to individual idiocyncrasy to these preparations.

Abrodil is also used intravenously. It is chemically sodium mono-iodomethane-sulphonate and contains 52 per cent. of iodine. It is soluble in water to the extent of seventy per cent. at the room temperature. It must be designated as absolutely non-poisonous from the pharmacological standpoint when used in the prescribed doses. The iodine is not split off in the organism and the excretion of the drug takes place very rapidly. Fifteen to twenty grams are generally sufficient. The literature on the preparation is as follows: Bronner, Hecht and Schueller, Fortschritte Roentgenstr., year 1930, volume 42, page 206; Teschendorf, Roentgenpraxis, 1930, page 937.

Uroselectan, which was prepared by Binz and Raeth, is the sodium salt of 2-oxy-5-iodopyridin-normal-acetic acid and it has the following formula: $C_5H_2I_2:O(N.CH_2COON_a)$. It contains 42 per cent. of iodine and is readily soluble in water. The average person reacts very well to this preparation, and it has been established that a person weighing sixty kilograms, that is about 132 pounds, can stand the intravenous injection of 180 grams, about half a pound, of the preparation without any harmful effects. In general forty grams are used for the preparation of organs of the body for X-raying. Here again there is no splitting off of free iodine. The elimination of the unchanged substance through the kidneys begins to take place about fifteen minutes after it has been administered. Elimination is quantitative. It is particularly suitable for the preparation of the urinary tract for X-ray photography. It has also been found useful for the preparation of blood vessels, especially enlarged veins, for X-raying. The literature on this preparation is very extensive and the following important references may be mentioned: a bibliography in Med. Mitt. der Schering Kahlbaum A. G., volume 2, number 2; Binz, Raeth. von Lichtenberg, Zeitschrift fuer angewandte Chemie, year 1930, page 453.

Bluehbaum, Frick and Kalkbrenner have prepared a product, which is called Umbrathor, on entirely new principles. (See Fortschritte Roentgenstr., year 1928, volume 37, number 8.) A positively charged sol is precipitated by the negatively charged constituents of the mucous secretion, when introduced into cavities which are lined with mucous membranes. The precipitate is deposited on the walls of the cavity. Hence, when an X-ray absorbing sol has been used, a more or less dense film of shadow-forming material was formed. The advantage over such materials that fill up the cavities entirely, is particularly that the normal shape of the organ is retained and inflammatory conditions on the mucous membranes themselves can be diagnozed by the varying densities of the shadows in the X-ray photographs. A number of sols were experimented with and of these Kohlschuetter and Frey found that the thorium oxide sol was the best suited for the purpose. This sol, which is called by the name Umbrathor, is very stable. It has practically the same viscosity as that of water and is as good as inert to the cell protoplasm. The radioactivity is so slight (the semi-time value of thorium amounts to 1.5 times 10^{10} years and the radiation consists predominately of alpha-rays, so that there need be no fear of injury when this preparation is used.

A number of new organo-preparations are interesting. One of these is known as Elityran and is made by the I. G. Farbenindustrie A. G. It is a preparation containing hormones of the thyroid gland. Thyroxin, which was isolated by Kendall from the thyroid gland and is obtained in the form of a crystalline iodine compound, does not completely substitute for the therapeutic action of the entire thyroid gland. For it is unquestionably not the sole active hormone, that is contained in the thyroid gland. This is proven by the fact, that the iodine, which is contained in thyroxin and di-iodothyroxin, represents only approximately twenty five per cent. of the total iodine, that is found in the thyroid gland. It is claimed that Elityran is a completely active preparation, which contains from 0.7 to one per cent. of iodine and even a higher percentage of the latter element. The iodine content of Elityran, as compared with the iodine content of thyroxin, is as one to eighty. Nevertheless, the activity of Elityran, on the basis of the iodine content, is about ten times as great as that of thyroxin on the basis of metabolism.

Kallikrein is another interesting preparation. This is made by the I. G. Farbenindustrie A. G. E. K. Frey and H. Kraut (see Hoppe-Seylers Zeitschrift physiol. Chemie, year 1926, volume 157, pages 32ff; year 1928, volume 175, pages 97ff; Muenchner med. Wochenschrift, year 1928, page 763; Schmiedeb. Arch., year 1928, volume 133, page 1, as well as H. Kraut, Chemiker Zeitung, year 1930, pages 849 to 851) found a new hormone in the urine, which has the power of reducing the blood pressure. This is the preparation called Kallikrein. According to the opinion of the discoverer of this hormone, it is formed in the pancreas just like insulin, but on the other hand the new hormone is entirely different in its properties and action than insulin. Experiments, which were carried out on animals with the new hormone, showed that it can greatly decrease the blood pressure with simultaneous increase of the beat of the heart with regulation of an irregular pulse.

Kallikrein is a substance which dialyzes with difficulty only. It gives a positive Millon and Pauly

(*Continued on page 488*)

CORK-TEX

THE IMPROVED SEALING MEDIUM

Write for full information

BOND

Write for full information

MANUFACTURING CORPORATION

WILMINGTON, DELAWARE

"FILMASEAL"

Trade Mark Reg. Patents Pending

Airtight . . .
Leakproof . .
Tamperproof .

A transparent film sealed to top of container
Plus our continuous thread screw cap
Film must be removed to reach contents
Used with standard C. T. bottles and jars
Automatic application . . . no decrease in output
Adapted to large scale production
One of our films will serve your purpose

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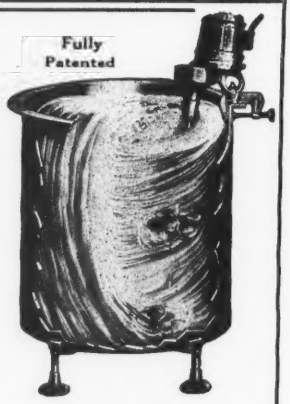
SANISEAL METAL MILK CAPS . . . DISTILLED WATER CAPS
CROWN CORKS
CONTINUOUS THREAD CAPS . . . SPECIAL PURPOSE CAPS

Closure Specialists Since 1890

LIGHTNIN PORTABLE MIXERS

Fully Patented



FOR MIXING LIQUIDS in ANY SIZE TANK

MIXING liquids thoroughly, quickly and economically is an important process in the making of your product! That is why LIGHTNIN mixers become daily more important to you and to your field. The "double action" illustrated here is the reason for LIGHTNIN thoroughness; LIGHTNIN speed; LIGHTNIN economy in time and labor saving. And there is a LIGHTNIN with just the size . . . power . . . and capacity you require.

MIXING EQUIPMENT CO., Inc.

Originators and Largest Manufacturers of Portable Electric Mixers

1060 Garson Ave.
Rochester, New York

229 EAST 38th STREET
NEW YORK CITY

For Plant Managers

By Francis Chilson

Introducing a regular feature each month as an exchange of ideas between plant managers.

Developing the Non-Counterfeitable Package

COUNTERFEITING of nationally advertised proprietaries is costing the industry considerable money in lost business, lost prestige, through inferior quality of counterfeit merchandise sold under reputable names, and also very much cold cash in running down and attempting to obtain convictions of counterfeiters. One manufacturer told the writer that after spending a lot of money in employing detective agencies to apprehend the culprits, his efforts were emasculated because two of the three counterfeiters got suspended sentences and the ringleader got only three months!

All packages can be counterfeited almost exactly—exactly enough at any rate so that neither the retail dealer nor the consumer will recognize the counterfeit. Some companies have resorted to the futile expedient of using water-marked label paper and cabalistic signs in the design of packages. But you cannot expect a consumer to soak off the label to look for the watermark, nor can you expect him to go over the package with a microscope. On the other hand if it became generally known that your merchandise is subject to the depredations of counterfeiters it might influence sales adversely. Since a package cannot be changed continually, the answer seems to lie in placing on it some distinctive feature that cannot be duplicated by the counterfeiter, and which will be so conspicuous as to be recognizable instantly by both dealer and consumer as the private seal of the maker

For some time the writer has been looking for a transparent wrapper, label, band or seal of special material, which could have a manufacturer's name or trade-mark worked into it during production in the form of a colored water-mark or some similar device. The seal had to be of such a character that it could be obtained only from one or two reputable sources, and the marking of such nature that it could not be duplicated.

Transparent cellulose offered the most likely possibility, but we discovered that it could not be water-marked nor treated in any of other ways that we suggested. It was recommended however that embossing of Cellophane might do the trick. This would check counterfeiting to a large degree because this material is very difficult to emboss away from the maker's plant. An embossed label of this kind could be put on as a wrapper, as a label or as a neck-band without changing the existing design of the package in any way, and it could be applied on standard equipment. Paper of this special nature would have to be purchased in fairly large lots and the manufacturer would have to pay for his own embossing rolls. But after embossing, the paper could be cut up into several sizes for different packages.

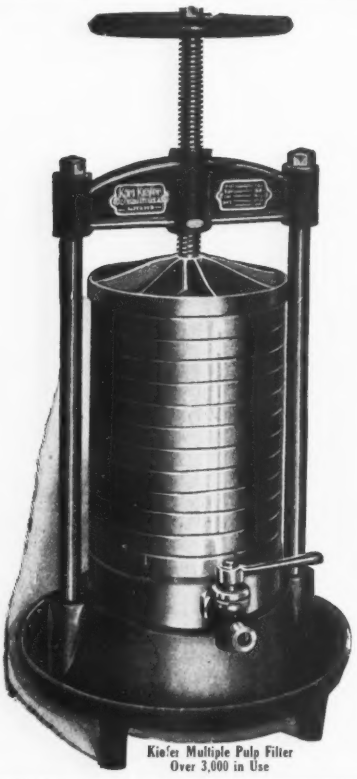
In discussing this with the officials of the company in question another possibility was suggested by them in the form of a cellulose band which also could be embossed and which could be made in special colors. This band has the added protective feature of being made only by one manufacturer in America, and it could, moreover, be used to seal the product so that the closure could not be removed. Since it is a new product the company has not developed a machine for applying it; but has indicated the feasibility of such a device when production so warrants.

Will a Vacuum Filler Fill Cracked Bottles?

Our answer is, Yes and No. We'd hate to be selling a vacuum filler on this one feature alone. If the crack admits air the bottle will not fill. But we've seen a good many cracks that didn't admit air until the bottle received a hard jolt. Cracks often develop in annealing bottles and do not go entirely through. Obviously this type of bottle will fill on any filler. But I doubt if there are enough in a run to worry about. Bottle making is becoming an exact science.

Speeding Up Drug Extraction

For some time we have been looking out for a means of shortening the process, of Drug extraction, of making it more thorough, and of making the recovery of the solvent more complete. In general the usual procedure requires a mixer to moisten the ground crude preliminary to percolation, a battery of percolators, and some form of solvent recovery apparatus. The process is slow and unless unusual care is taken it is liable to be inefficient. It seems that the entire process might be carried out in a vacuum mixer equipped with a condenser. The crude could be placed in the mixer, the solvent added, and the cover closed. The mixer would agitate the crude and the solvent, and thus facilitate the release of the soluble constituents. After a time the heavy extract could be drawn off and fresh solvent added. When it is



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Over 3,000 in Use

FILTERS
FOR ALL PURPOSES

A COMPLETE LINE OF FILTERS—paper sheet filters, filtermasse filters, cloth pad filters—in all sizes—for filtering any quantity from a few gallons a day up to thousands of gallons a day.

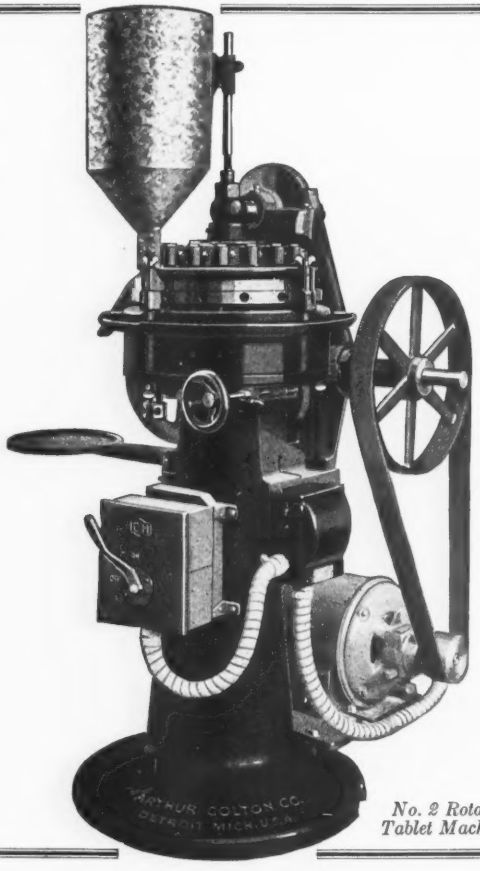
FILTERS GUARANTEED to thoroughly clarify any product for which they are recommended.

FILTERS OF PRACTICAL CONSTRUCTION—made for convenience of use—for economical operation—for permanent service. (Some in operation over thirty years.)

FILTERS THAT HAVE ALWAYS set the standard of brilliancy in filtered liquids—that give a real filtration, not a mere straining—that take out all the cloud and sediment and make the product crystal-clear and sparkling.

NEXT TO THE QUALITY of your product, filtration is the most important thing about it. Let us show you the difference in your product real filtration will make. Send a gallon of it. Our laboratory will make thorough tests to tell you what type, what size filter you need. No cost; no obligation.

The Karl Kiefer Machine Co.
Cincinnati, Ohio



No. 2 Rotary Tablet Machine

New and Improved!

We have no yearly models—but improvements and refinements are being constantly added to Colton machines.

There are over five hundred Colton Rotaries in use.

Superior design, sturdy construction and ease in operation have made this possible.

The No. 2 Rotary Tablet Machine has such desirable features as *positive pressure*, eliminating varying thicknesses of tablets; *hardened steel gear drive*, eliminating frequent replacement of worms used on other makes, and *sliding upper punch holders*, to hold the punches rigidly, enabling the manufacture of special shaped tablets most satisfactorily.

Write for Catalogs.

ARTHUR COLTON COMPANY
2620 East Jefferson Ave.
Detroit, Michigan

evident that the crude is thoroughly exhausted, the vacuum pump could be started and the solvent recovered, after which the dregs could be dumped out. The mixer we have in mind is the large type used in the baking industry. We might add in passing that these mixers have already been used in the drug industry, but only for solvent recovery. Why not use them for the entire process? It seems theoretically feasible. We would appreciate hearing from you on this.

Seen at the Chemical Show

Something new in face powder mixers, the Maclellan Batch Mixer . . . Alsop's new disk filter . . . Kent's mills for grinding lipstick base, rouge, tooth-paste . . . Stokes new automatic water still . . . Turbine liquid mixers by The Turbo Mixer Corporation and also The New England Tank and Tower Company . . . Burt's new straight line automatic labeler . . . U. S. Bottlers Improved capper . . . Triangle Package Machinery's new powder filler . . . Philip Wirth's big gravity filter for large scale filtration . . . Baker Perkins big vacuum mixers . . . Colton's neat clippers closure automatic tube filler . . . Something new in highspeed powder sifters, the turbine sifter by Abbe Engineering . . . Karl Kiefer's new Impacta filler for pastes and cold creams . . . (To be continued next month) . . . .

J. F. Ballard Dies

James Franklin Ballard, president of James F. Ballard, Inc., manufacturer of proprietary medicines, St. Louis, died April 23 in Madison Hospital, New York. Mr. Ballard was eighty years old and death was due to filiria, a rare tropical disease which he contracted in the Orient two years ago.

Mr. Ballard was born July 16, 1851, at Ashtabula, Ohio. When fourteen years old he entered the drug business in the employ of a drug store in Almont, Mich., where his parents moved when he was a boy.

A new solvent which dissolves olive oil in all proportions makes possible solutions of pure olive oil in various concentrations to give thin free flowing liquids of permanent crystal clarity. On applying such solutions to the body, the solvent evaporates quickly, leaving behind a thin film of oil which penetrates into the pores of the skin. It softens the hair and keeps it glossy. Perfume may be added. The Solvent is known as Albacol and is produced by Glyco Products Co., Brooklyn, N. Y.

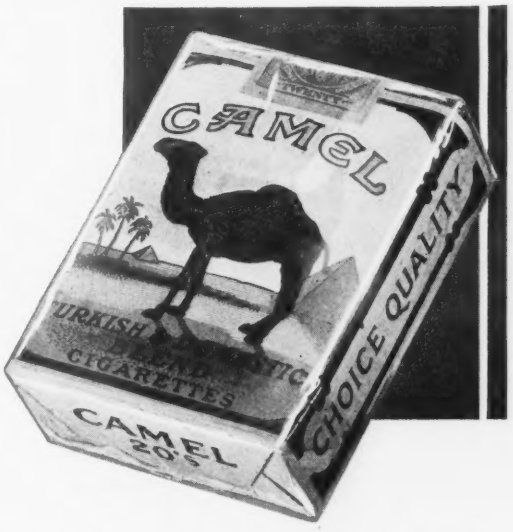
Dr. James Lorrain Smith, dean of the faculty of medicine and professor of pathology at Edinburgh University, Edinburgh, Scotland, died April 20. He was internationally known for his researches and as the discoverer during the world war of a highly effective antiseptic solution known as eusol.

Bismuth metal and salts are steady in price. Demand has been in a routine way but sufficient small orders are being booked to make a fair showing in general volume. The metal is firmer so that the price of the salts is well maintained.

Competition has been the leading factor in the reduction of 10c per lb. in the price of corrosive sublimate by leading manufacturers. Powdered and granular are offered at $1.35, with the crystals being quoted at $1.50 per lb. Demand has improved with the reduction in price with indications that the remainder of the spring would show a continued heavy movement.

New Idria Quicksilver Mines, Inc., report for the year 1930 a deficit of $22,145. This compares with a deficit in 1929 of $76,672.

Your product, too might benefit . . .



by this new Tight-seal Cellophane Wrapping

Tight-Seal Cellophane wrapping has proved to be an important contribution to the sales advantages of Camels. But the advantages of this remarkable wrapping are by no means confined to cigarettes. Any product whose freshness, fragrance or potency must be retained to give the utmost satisfaction, will benefit by being wrapped in Moisture-proof Cellophane on our Tight-Seal Wrapping Machine.

This machine hermetically seals the package by an entirely new method, producing an airtight, moisture-proof seal. The result is a package which retains the properties of the product, and gives the utmost protection against atmospheric conditions, contaminating odors, or other outside influences.

Why not send us your product, and let us show you what a decided improvement Moisture-proof Cellophane wrapping will make in its appearance and keeping qualities.

PACKAGE MACHINERY COMPANY
Springfield, Massachusetts
New York Chicago Los Angeles
London: Baker Perkins, Ltd.

PACKAGE MACHINERY COMPANY
Over 150 Million Packages per day are wrapped on our Machines

ART
TUBE
COMPANY

IRVINGTON, N. J.

. . . maybe it's luck . . .
that made 1930 . . . our very best year . . . and 1931 . . . to date . . . even 21% better . . . then again . . . maybe it's because . . . in ART TUBES . . . you get your money's worth . . . reliable tubes . . . at the right prices.

When Bottles are Washed

(Continued from page 444)

3—Machine. (a) Minimum temperature of caustic solution always to be at least 120° F.—automatic thermoregulator suggested; (b) maximum speed to expose bottles within the caustic solution at least ten minutes; (c) examine each brush daily; keep brushes overnight, or when not in use, in moderately strong soda solution; (d) be certain that the caustic solution is not diluted by leakage or seepage.

There are several things to be considered in selecting the proper detergent. One that would be effective as both a cleaning and germicidal agent might have a corrosive action on the machinery used in cleaning. Ordinary soap is considered one of the oldest and best detergents, even in modern times. While soap has some germicidal properties it is considered primarily as a detergent. The germicidal activity seems to be due more to the mechanical removal of bacteria. However, the soda and caustic compounds ordinarily used in automatic bottle washing have a limited detergent effect, but have very definite germicidal properties. Colloidal detergents seem to be the result of efforts to develop a product that possesses both detergent and germicidal properties.

There are any number of concerns who make up modified soda solutions under trade names; all of which are effective as detergents to special degrees. The Mathieson Alkali Company put out a hypochlorite solution known as HTH; and the Diamond Alkali Company have their own brand of Cleaner and Cleanser, as well as Bottlers' Alkali. Oakite, the product of the Oakley Chemical Company, is well known as a cleansing agent. The Philadelphia Quartz Company, Solvay Process Company, Duz Manufacturing Company, as well as all the important soap companies put out various grades of detergents suitable for container washing on a large or small scale.

Some knowledge of the hardness in the water is essential to the choice of a detergent. This is revealed by the clarity of the glass containers after washing; and if hard water is present there are detergents or detergent compounds which will soften the water. Among the common detergent alkalis are: caustic soda, soda ash, sodium bicarbonate, trisodium phosphate, and ammonium sulphate. Caustic soda ranks as the strongest alkali. However, the action of caustic is so vigorous chemically that some substances are partly destroyed in washing. It is recommended that not over a 4 per cent. solution of caustic soda be ever used, and this strength only where very dirty utensils or containers are to be cleaned, following by thorough rinsing. Soda ash more or less fills the bill of a general detergent milder than caustic, and with chemical and physical reactions characteristic of both a soap and a caustic. It is also a water softener and will tend toward free rinsing.

Drug Selling in Panama

(*Continued from page 448*)

built up by education through the press, but as refrigeration is necessary from factory to consumer, it is difficult to handle these goods. Possibly a connection might be made with the Panama Canal authorities, who have adequate refrigeration facilities. They would be excellent distributors, and some working arrangement might be entered into with them and the consumers in Panama. This also applies to biologics.

Taken as a whole, Panama offers a satisfactory market for American medicinal products and toilet goods, but is limited in scope by the small purchasing power of the native population. The trade would probably not justify the appointment of a personal representative, and the manufacturer must therefore, depend upon securing satisfactory local agents with connections already established.

America's Perfumes

(*Continued from page 467*)

At the same time there can be no doubt that if the same efforts and the same amount of money were no longer diverted but put to work in its only and proper field—namely the making of perfumes and toilet preparations—results not only would be better as to quality of product but also as to monetary returns on the investment.

A. M. T. A. Meeting

(*Continued from page 468*)

entertainment committee, of which Frank J. Lynch was chairman, was well attended and eminently successful.

H. Henry Bertram, president of the association opened the convention with an address of welcome. He was re-elected to serve another term as president. Other officers were also reelected as well as members of the executive committee.

Producers of 126 different materials have come to Stokes & Smith for help in their package problems—and found the solution to their difficulties. This wealth of experience is at your disposal—without obligation. Write us today.

STOKES & SMITH CO.

Package Filling, Sealing and Weighing Machines

Tight-Wrapping Machines, Envelope Sealers

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AN ADHESIVE FOR EVERY MACHINE OR HAND OPERATION

Too Old To Learn?

Not by a long shot—if you have real American Business-blood in your veins. Then let us demonstrate

MIKAH

BOTTLE LABEL GUM

right in your own plant and show you just what advantages you will get from a modern Bottle Gum.

No obligation, of course. Write today.

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WORLD'S LARGEST PRODUCER OF ADHESIVES

Sales Offices in all principal cities

Therapeutic Novelties

(*Continued from page 481*)

reaction. It is very sensitive to the action of the temperature, particularly of more than 60 degrees C. It is also sensitive to the action of acids, bases and alcohol. The standardization of this hormone is accomplished by testing the decrease of the blood pressure that is obtained by its administration to dogs. Its therapeutic use is indication in cases of high blood pressure, vascular cramps, and the like.

Two additional organo-preparations, of whom it is still not definitely known that they are specific hormone preparations, which are however most assuredly closely related to one another (if they are not actually one and the same preparation) are Eutonon and Lacarnol. The former is made by the Promota company and the latter by the I. G. Farbenindustrie.

Eutonon goes back to the investigations that were carried out by Zueler, who obtained an extract from the liver and the muscle, which extract had an action on the heart. The manner of manufacture of this preparation involves the use of liver as the starting material. For literature on Eutonon, see Rubensohn, Med. Klin., year 1930, number 40 and Zueler, Med. Klin., 1930, number 19.

Lacarnol is an extract which is obtained from the muscular system of warm blooded animals. It is stable to heat. Haberlandt isolated a substance from the heart, which had an action of the circulation of the blood. This substance was found not to be identical with any of the substances, known up to the time, and possessing analagous action. Further experimentation on this product was carried out in the pharmacological laboratories of the I. G. Farbenindustrie A. G. and this experimentation yielded the result, that extracts, which were obtained from the muscular skeleton of these warm blooded animals, also had the same action. Lacarnol is such a muscle extract, which is available in stable form and in the proper shape to be administered in accurate doses. These two preparations, that is the aqueous extract and the alcoholic extract, are indicated for use in angina pectoris and like heart actions. For literature on Lacarnol, see Fahrenkamp, Med. Klin., year 1929, number 9 and Haberlandt in the same journal.

Designing a Line for the Future

(*Continued from page 479*)

added to the line from time to time. Existing best sellers can be differentiated by means of different colored caps and labels, and by modifying the design of the container slightly without changing its major dimensions. Before pointing out how a change in design can be effected without involving a change in equipment set-ups, it might be well to point out that uniformity of color and design is a valuable advertising asset as many successful lines have proved: Squibbs being a good example. The well advertised items, because of their family resemblance, carry along their poor relations which are not widely advertised.

But if variation is demanded it can be carried out by changing the colors of the caps, labels and cartons; and also by slightly modifying the design of the standard containers. If the label sizes are not changed and the over-all dimensions of the container scrupulously maintained, it will make no difference in production excepting that investment in special inventories will increase. If each product is differentiated by changing the color of the label, only then the changes can be effected without increasing the inventories at all. Even when different colored caps are used, the increase in inventory is very slight because various colored caps can be had from the standard molds or dies; and if the new item fails later on, the specially colored caps can be used on the next new item that is brought out.

Changes in the design of the standard container are never desirable and should be avoided because commitments must be made to purchase large runs as each modification requires a new mold. Certainly, a standard container should never be modified for any but an item whose market is absolutely assured. But where it is considered essential to differentiate between best sellers of a given size and the company is willing to stand the larger investment in inventories, the modification can be effected without necessitating a corresponding change in factory set-ups in any of the following ways:

By beveling the corners of the bottle.

By placing a band of fine knurling around the container above and below the label space.

By placing a band of horizontal or vertical embossing around the bottle above and below the label space.

By placing fine vertical lines on the back and front of the bottle along the side of the label space.

By corrugating the sides of the bottle, etc., etc.

Such modifications will effect a change in the appearance of the bottle without forcing a change in equipment set-ups or requiring the purchase of additional accessories.

A standardization program can with equal facility be carried out by a large, long-established business, but it needs a relatively long period of time. The standard design and standard size must be based on existing best sellers and the remainder of the line gradually developed into the standard categories. This may involve decreasing the size of some containers and increasing the size of others; and it will involve culling out of the line a lot of dead wood, a procedure which will materially increase the net profit of the business at once. When the program is carried out over a period of years, these changes can be made without disturbing established business. In any event, if most of the large houses did nothing else but resolve to cull out dead wood, and to add no new items unless they are reasonably assured of success, they would benefit themselves and the trade immensely.

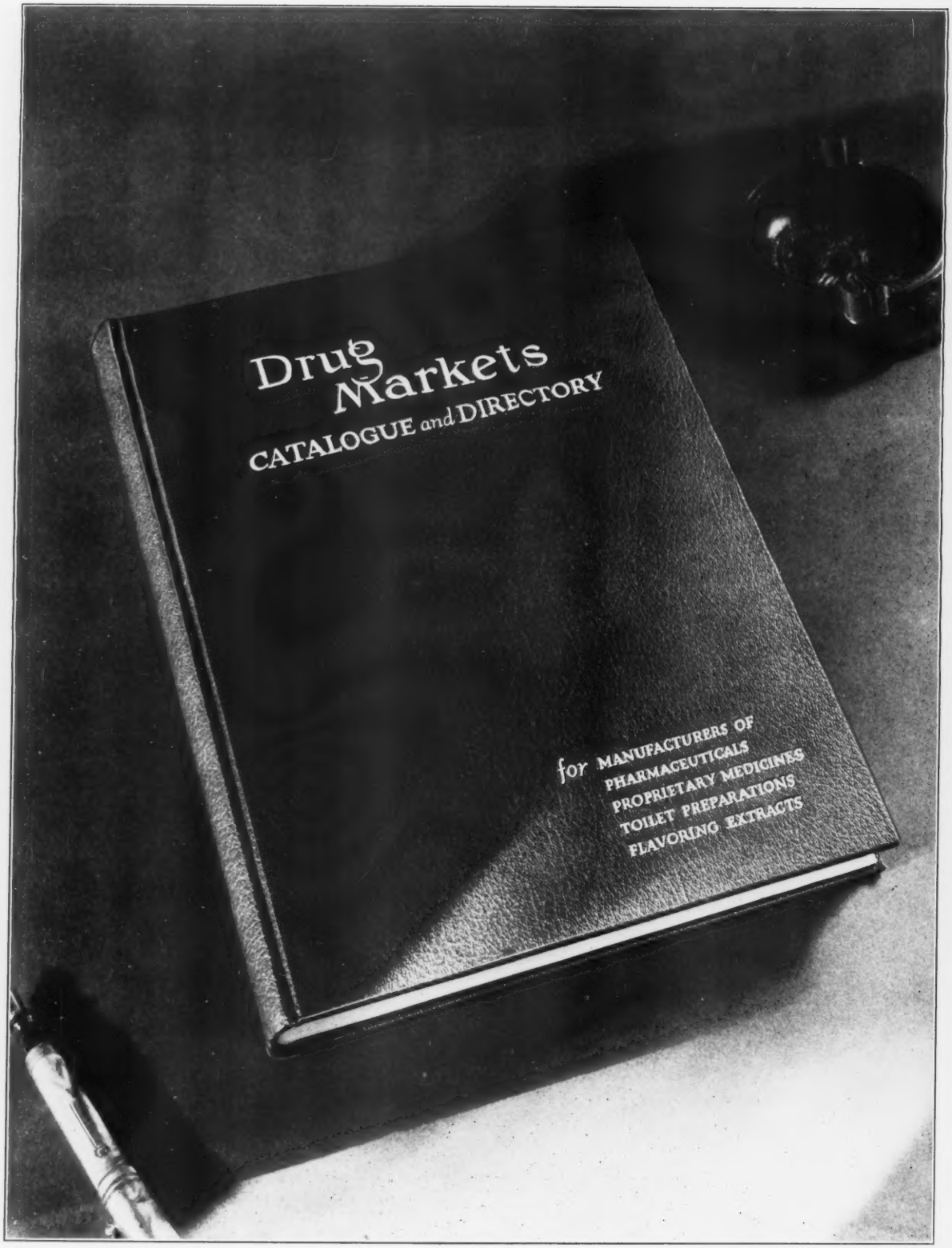
GOOD NEWS

For the purchasing department, the factory and the laboratory.

See following pages for detailed information on the most complete reference book published for manufacturers of pharmaceuticals, proprietary medicines, toilet preparations, flavoring extracts.

Every subscriber has a copy

Every buyer, chemist and plant manager needs one



See Following Pages

GOOD NEWS FOR BUYERS, CHEMISTS, AND « PLANT MANAGERS »

The following seven pages are reprints, showing a sample page from each of the seven major sections of Drug Markets Catalog & Directory.

These sections are:--

Machinery and Equipment	Section	A	38 pages
Packaging and Shipping	"	B	32 "
Chemicals and Raw Materials	"	C	128 "
Essential Oils, Aromatic Chemicals and Flavors	"	D	112 "
Botanical Drugs and Spices	"	E	82 "
Associations and Councils	"	F	22 "
Prices, and Imports (10 years)	"	G	19 "

Drug Markets Catalog and Directory is a complete, authoritative encyclopedia and directory of more than 2,500 chemicals, essential oils, raw materials, drugs, flavors, machinery and packages. In book binding, 9x12 inches and 448 pages.

Every buyer, chemist and plant manager needs a copy.

FILLING MACHINES: Powders, Crystals and Other Dry Materials, including Stringy and Flaked Substances—Volumetric, Net and Gross Weights Filling Machines.

The machines in this category are used for filling such materials as face powder, boracic acid, bicarbonate of soda, fused effervescent salts, and all other dry, free flowing materials; and also stringy and flaked materials like soap flakes, which will not flow of their own accord. These materials may be filled into boxes, cans, fiber cans or drums, cartons, wide-mouth bottles or jars. In this group of machines there are three distinct classes: The Volumetric, which is used for free flowing materials; the net weight filler, which is used for free flowing materials usually of considerable value; the gross weight filler, which is used for the materials like soap flakes, or leaves which will not flow of their own accord and must be packed into the containers. Gross weight fillers are very widely used for filling all types of materials which vary considerably in density. There is considerable discussion going on among manufacturers of these machines as to whether the volumetric type of operation is not fully as accurate as net weighing. Volumetric fillers come in several distinct types: the hand machine, which consists of a hopper, a feed augur, and a foot elevated filling table; the semi-automatic types which require an operator to feed the containers and to remove them from the filling station; and the fully automatic types which place the containers beneath the filling stations, fill them, shake them down, where necessary, and deliver them to the sealing machines. For certain types of friction top containers, capping attachments are available, which makes it possible to press the cap on after it leaves the filling station. Another interesting type of volumetric filler is the vacuum filler, which, of course, is limited to containers that are air-tight and which will not collapse under vacuum. The type of volumetric filler selected will depend upon whether the materials will pack of their own weight or whether they have to be filled from the bottom of the container upward. Some materials, such as face powder, have to be packed, in order to prevent settling when a container has stood on the dealer's shelves. Other materials, such as effervescent salts, will flow readily of their own accord and may be filled from the top of the container. Electrically heated hoods have been built for these machines to permit the filling of hygroscopic salts without injury—Sal-Hepatica being a case in point.

Net weight fillers are used on expensive materials and are so designed as to fill the containers from a weighing chamber definitely gauged to hold a given quantity of the material. These machines, likewise, may be had in hand, semi-automatic and automatic types.

Gross weight fillers, being used for materials which will not flow, are provided with plungers to force a definite weight quantity of the material into the containers. It is the practice in large scale operation to set up gross, net, or certain types of volumetric fillers in a production line consisting of the following equipment; a carton feeder, carton liner, bottom sealer, filler of the required type, top sealer, wrapping machine, if necessary, case packer and shipping case sealer. The automatic type of gross, net weight and volumetric fillers are units which consist of a top and bottom sealer, so arranged as to deliver the container to the filling station, returning it for top sealing after it has been filled.

Hand or Foot Operated Volumetric Fillers

See page

Stokes Machine Co., F. J., Olney P. O., Philadelphia. 18-20A
Day Co., The J. H., Cincinnati, O.
Robinson Manufacturing Co., Muncy, Pa.
Ross & Son Co., Charles, 148 Classon Ave., Brooklyn, N. Y.

Semi-Automatic Volumetric Fillers

See page

Pneumatic Scale Corp., Ltd., Norfolk Downs, Mass. 17A
Stokes Machine Co., F. J., Olney P. O., Philadelphia. 18-20A
Stokes & Smith Co., 4920 Summerdale Ave., Phila. 21A
Triangle Package Machy. Co., 910 No. Spaulding Ave., Chicago.

Automatic Volumetric Fillers

See page

Pneumatic Scale Corp., Ltd., Norfolk Downs, Mass. 17A
Stokes & Smith Co., 4920 Summerdale Ave., Phila. 21A
Consolidated Packaging Machinery Corp., Buffalo, N. Y.
Ferguson Co., J. L., Joliet, Ill.
Johnson Automatic Sealer Co., Ltd., Battle Creek, Mich.

Net Weight Fillers, Semi-Automatic and Automatic

See page

Pneumatic Scale Corp., Ltd., Norfolk Downs, Mass. 17A
Stokes & Smith Co., 4920 Summerdale Ave., Phila. 21A
Consolidated Machinery Corp., Buffalo, N. Y.
Ferguson Co., J. L., Joliet, Ill.
Johnson Automatic Sealer Co., Ltd., Battle Creek, Mich.
Scale & Machine, Inc., 591 Hudson St., New York.

Gross Weight Fillers, Semi-Automatic and Automatic

See page

Pneumatic Scale Corp., Ltd., Norfolk Downs, Mass. 17A
Stokes & Smith Co., 4920 Summerdale Ave., Phila. 21A
Consolidated Machinery Corp., Buffalo, N. Y.
Ferguson Co., J. L., Joliet, Ill.
Johnson Automatic Sealer Co., Ltd., Battle Creek, Mich.
Scale & Machine, Inc., 591 Hudson St., New York.

FILLING & CLOSING MACHINERY, COLLAPSIBLE TUBES.

For the purpose of filling preparations in collapsible tubes the following machines are necessary: A filling machine, a closing machine and a clipping machine—the latter being unnecessary when the tube does not require a clip. Each of these types of machines comes in hand or semi-automatic design, and the functions of all of them are incorporated in the fully automatic types. Hand fillers range from the small crank operated machine to the hopper types which require an operator to place tubes on the filling nozzles. Certain types of semi-automatic filling machines make provision for closing the tube also. The closing apparatus may be hand operated; semi-automatic, which merely closes the tube, the semi-automatic, which also incorporates a clip crimper. The fully automatic machines fill close and crimp the tubes; but if clips are required, they are formed from a spool of wire ribbon, or fed from a hopper and then pressed on. There are four different companies making fully automatic machines. Although fully automatic machines can be adjusted for various sizes, such practise is not economical, as better and more uniform results are obtained when the machine is built for a definite size. The choice of a tube filling outfit depends upon the nature of the product, the amount of production and the size of the tube. Some materials are very heavy and will trap air, making it necessary to select a machine the filling nozzle of which will go down into the tube. When materials are of this character, it is almost always necessary to provide for a scraper which will force the materials down into the filling nozzle. Other materials require heat, and all tube filling equipment is manufactured with means for heating, either by steam or electricity.

The selection of a tube is important, not only in the operation of fully automatic equipment built for a definite size, but also for semi-automatic operation. When a semi-automatic rotary tube closer and clipper is used, trouble will be experienced from off-sized tubes because the centrifugal force of the table will tend to turn the tubes in a manner that will cause crooked closing. Sometimes this force is sufficient also to throw the clip out of position before it is crimped.

See page

Stokes Machine Co., F. J., Olney, P. O., Philadelphia. 18-20A
Colton Co., Arthur, 2600 E. Jefferson Ave., Detroit.
Kiefer Machine Co., The Karl, Cincinnati, Ohio.
Weimann Bros., The, Derby, Conn.

FILLING & COUNTING MACHINES, PILLS, TABLETS AND CAPSULES.

Counting paddles are used for small objects of the above character, when production is extremely limited. An intermediate hand operating device is available in the counting and filling rack, which consists of a series of tapered grooves arranged in a manner to feed a definite number of pills, tablets or capsules into a movable channel. This channel, being tipped up, pours the objects into a container, at the same time shutting off the supply from the tapered channels. Automatic counters for uncoated tablets may be connected directly to the presses and act also as filling machines. The compressed tablets pass over

• • • • • • Sample page, reprinted from Section A • • • • • • •

American Can Co., 230 Park Ave., New York.
Cincinnati Mailing Device Co., 300 Eggleston, Cincinnati.
Container Corp. of America, 111 W. Washington, Chicago.
R. C. Can Co., 121 Chambers St., St. Louis.
Ritchie & Co., W. C., 831 W. Van Buren, Chicago.
Sefton National Fibre Can Co., Maplewood, St. Louis.

CANS (Tin, Decorated, Printed and Plain).

Cans are used as containers for Bicarbonate of Soda and other effervescent medicinals and salts, and also for toilet creams, toilet powders, etc. Tin containers furnished in all sizes and shapes. Tin plate used varies in thickness from 5/1000 of an inch to 32/1000 of an inch. Most cans are made from tin plate about 9-10/1000 of an inch in thickness. Two classes of plate used are primes and seconds. Cans may be either seamed or seamless, the great majority being in the former group. The seamless variety is made from a single piece of tin as the name indicates and generally restricted to shallow containers. The seamed variety is soldered at the side and sealed at top and bottom with various compositions to prevent leakage when a wet material is to be contained. Various types of closures used on the tin can are: sifter top, hinge cover, slip cover, screw cover, inside and outside friction cover, slide cover, tear strip top, and hermetically sealed top. Aside from protection of product, the tin can is well adapted to lasting decoration through lithography in special and multi-colored designs. Shipped in cartons.

See page 12B

Metal Package Corp., 110 E. 42 St., New York.
Acme Can Co., 1026 W. Allegheny, Philadelphia.
American Can Co., 230 Park Ave., New York.
Continental Can Co., 100 E. 42 St., New York.
Phoenix Hermetic Co., 2444 W. 16 St., Chicago.
Robertson Steel & Iron Co., W. F., Springfield, Ohio.
Tin Decorating Co., Baltimore, Md.

CAPS (Cellulose and Gelatine).

A special form of bottle seal developed in a variety of colors. This seal has the advantage of shrinking to the contours of the bottle neck and cork or cap.

Armstrong Cork Co., Lancaster, Pa.
Du Pont Cellophane Co., 2 Park Ave., New York.
Parke, Davis & Co., Detroit, Mich.

CAPS (Metal, for Bottles and Jars). (See this subdivision under "Closures").

CAPSULES.

Lilly & Co., Eli, Indianapolis, Ind.
Parke, Davis & Co., Detroit, Mich.

CARTONS (Fibre, Corrugated).

Bliss Inc., H. R., Niagara Falls, N. Y.
Container Corp. of America, Chicago.
Gair Co., Robert, 420 Lexington Ave., New York.
Gaylord Inc., Robert, 2817 S. 11 St., St. Louis, Mo.
Hinde & Dauch Paper Co., Sandusky, Ohio.
National Metal Edge Box Co., Philadelphia.

CLOSURES (Bottle, Jar, Can etc.).

A closure is any device which can be employed to close a container opening. It may not itself give a tight or hermetic seal since the tightness of the seal depends upon the liner or material making contact between the glass surface and the surface of the closure. The tightness of the seal also depends upon the inertness or freedom from effect of the contents on the liner material. The exception is the stopper which is of one material, cork, rubber, or glass. The following groupings list the closures available and specific information of value to the purchaser.

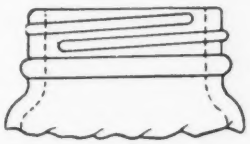
Caps (Metal).

Caps commonly employed for medicines, toilet preparations etc. are made for continuous thread (CT); divided thread; friction and special finishes, all of which are listed in this section. By finish is meant the thread or lugs formed at the top of the jar or bottle to which the cap is secured. The sealing surface is generally the upper surface of the container and some form of cap liner is employed depending upon the product.

CT finish caps are manufactured by a number of companies and made of several materials. These caps can be obtained in lacqured tin plate, brass—plain and polished, nickle plated or special finish, aluminum and zinc. They may be obtained in various plain colors or with lithographed decorations.

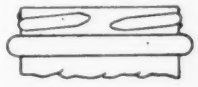
All caps for glass bottles and jars are manufactured to fit definite standard sizes and finishes which have been established by the Standardizing Committee of the Glass Container Association and adopted by the bottle manufacturers. For the purpose of acquainting the user with the standards and the sizes available for each type of cap a list of the finishes with a simple sketch, name or style of cap, G. C. A. number, size or number of cap and the approximate measurement in inches across the top of the container exclusive of the thread or lug is given, (Dimension A. Average). This list will enable the consumer to determine the sizes available in any style of cap commonly employed or the cap suitable for a container.

SHALLOW CONTINUOUS THREAD (CT)
G.C.A. No. 400



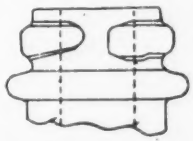
Cap Number or Size	*Dimension A average*	*Cap Number or Size*	*Dimension A average*
14	0 15/32	48	1 24/32
18	0 39/64	51	1 55/64
20	0 22/32	53	1 61/64
22	0 49/64	58	2 7/64
24	0 27/32	60	2 7/32
26	0 29/32	63	2 11/32
28	0 63/64	66	2 15/32
30	1 1/64	70	2 20/32
33	1 5/32	75	2 51/64
35	1 8/32	77	2 59/64
38	1 23/64	83	3 4/32
40	1 15/32	89	3 12/32
43	1 35/64	100	3 51/64
45	1 20/32	120	4 37/64

FOUR LUG AMERSEAL
G.C.A. No. 100



Cap Number or Size	*Dimension A average*	*Cap Number or Size*	*Dimension A average*
48	1 45/64	70	2 37/64
51	1 13/16	75	2 3/4
53	1 29/32	79	2 15/16
58	2 1/8	82	3 3/64
59	2 7/64	85	3 11/64
63	2 19/64	90	3 23/64
66	2 27/64	96	3 19/32

TWO LUG AMERSEAL
G.C.A. No. 150



Cap Number or Size	*Dimension A average*	*Cap Number or Size*	*Dimension A average*
17		30	1 1/64
20	11/16	33	1 11/64
24	27/32	38	1 13/32
27	61/64	43	1 17/32

PECTIN.

Natural jellying constituent of fruits.Citrus pectin is grayish-white powder standardized at jelling strengths of 100, 140 and 160. (Jelling strength indicates number of pounds of sugar that can be converted into a standard jelly under standard conditions). Uses:—Jelling Agent; Emulsifying Agent; maintain solids in uniform suspension in liquids.

See page

Calif. Fruit Growers Exchange, Ontario, Calif. 4D
Speas Manufacturing Co., Kansas City, Mo.

PELLETIERINE TANNATE.

Punicine Tannate. Mixture of Punicine, iso-punicine, methylpunicine and pseudopunicine tannates. Light-yellow, odorless, amorphous, tasteless powder. Soluble about 250 vols. water at 25°C.; alcohol. Action:—Anthelmintic.

See page

Hoffmann-La Roche, Inc., Nutley, N. J. 14C
Mallinckrodt Chem. Wks., 3600 N. 2 St., St. Louis. 20-23C
Merck & Co., Rahway, N. J. 26-27C

PEPSIN.

From glandular layer stomach of hog. White or yellowish-white, transparent or translucent scales, granules, amorphous, hygroscopic powder, or spongy masses; taste slightly acid or saline. Soluble freely in water with opalescence. Grades:—Granules, scales, powder, of U. S. P. strength and higher activity, such as 1-6000; 1-10,000, and 1-15,000. Containers:—25 lb. tins; 10 lb. tins; 5, 1 lb. bottles. Uses:—Intern., dyspepsia; peptonizing milk for invalids; digesting false membrane (in croup and diphtheria). Extern., digesting gangrous tissue from unhealthy wounds; for this purpose the stronger grades are used. Large doses may be taken with impunity. Action:—Proteolytic.

See page

Merck & Co., Rahway, N. J. 26-27C
Wilson Labs., 4221 So. Western Ave., Chicago. 49C
Armour & Co., Union Stock Yards, Chicago.
Digestive Ferments Co., 920 Henry St., Detroit.
Frederick Stearns & Co., 6533 E. Jefferson Ave., Detroit.
Parke, Davis & Co., 2951 Atwater St., Detroit.

PEPTONE

Soluble substance obtained from digestion of protein. Grades:—Powder, granules, paste. Containers:—Boxes, glass bottles. Uses:—Nutrient tonics, bacteriology, toxin production. Remarks:—The nitrogen content, and physical appearance varies with source of protein and method of hydrolysis.

See page

Merck & Co., Rahway, N. J. 26-27C
Wilson Labs., 4221 So. Western Ave., Chicago. 49C
Armour & Co., Union Stock Yards, Chicago.
Digestive Ferments Co., 920 Henry St., Detroit.
Frederick Stearns & Co., 6533 E. Jefferson Ave., Detroit.
Parke, Davis & Co., 2951 Atwater St., Detroit.

PETROLATUM.

Vaseline; Cosmoline; Saxoline; Petroleum Jelly. Fractional distillation still residues of paraffin base petroleum. White to amber, translucent, semi-solid mixture of hydrocarbons, with high carbon content. Sp. Gr. 0.820-0.865 at 60°C. M. P. 35°-54°C. Grades:—U. S. P.; Amber, White. Containers:—Bottles; tins; 300-350 lb. bbls. Uses:—Medicine; Lubricant; Ointments; Cosmetics. Action:—Emollient; Antiseptic.

See page

Kuhne-Libby Co., 54 Front St., New York. 18C
McKesson & Robbins, Inc., 79 Cliff St., New York. 24-25C
Merck & Co., Rahway, N. Y. 26-27C
Parsons, M. W., 55 Ann St., New York. 34C
Schwabacher & Co., Inc., 25 Beaver St., New York. 44C
Sherwood Petroleum Co., 233-37 St., Bklyn., N. Y. 45C
Sonneborn & Co., L., 114 Fifth Ave., New York. 46C
Stanco, Inc., 2 Park Ave., New York. 47C
Pennsylvania Refining, Karns City, Pa.
Thompson, Hayward Chem. Co., 29 St., Kansas City.

PHENOBARBITAL.

Luminal; Phenylethylbarbituric Acid; $CO(NHCO)_2C.C_2H_5.C_6H_5$. Made by condensation of phenylethylmalonic acid ester derivatives with urea. White, shining, crystalline powder. Odorless; taste slightly bitter. M. P. 172-174°C. Soluble alcohol, ether, chloroform; slightly soluble water. Grades:—U. S. P. Uses:—Medicine in Epilepsy, Nervous Excitement, Hysteria, Arteriosclerosis. Action:—Hypnotic; Sedative.

See page

Abbott Labs., N. Chicago, Ill. 2C
Fougera & Co., E., 41 Maiden Lane, New York. 10C
Mallinckrodt Chem. Wks., 3600 N. 2 St., St. Louis. 20-23C
Merck & Co., Rahway, N. J. 26-27C
Newport Chem. Wks., Inc., Passaic, N. J. 30-31D
N. Y. Quinine & Chem. Wks., 99 N. 11 St., Bklyn., N. Y. 33C
Benzol Products Co., Inc., 237 South St., Newark, N. J.
Gane & Ingram, Inc., 43 W. 16 St., New York.
Glogau & Co., 1295 Rand McNally Bldg., Chicago, Ill.
Seydel Chem. Co., 135 Halladay St., Jersey City.

PHENOL.

Carbolic Acid; C_6H_5OH. Made by fractionation coal tar; caustic soda fusion benzene sulfonic acid; high pressure hydrolysis chlorbenzene with caustic soda. White, crystalline mass or colorless crystals. Odor distinctive. Sp. Gr. 1.067. B. P. not above 183°C. M. P. 39-40°C. Soluble water, alcohol, ether. Grades:—Fused; crystals; U. S. P.; C. P. Containers:—Bottles; cans; 55 gal. (475 lb.) drums; 200 lb. drums. Uses:—Disinfectant; Manufacture Picric, Salicylic Acids, Phenacetin; Synthetic Resins; Perfumes; Medicine in Diarrhea, Tetanus, Typhoid, Cholera, Ulcers, Diphtheria, etc. Action:—Antiseptic; Antipyretic; Disinfectant; Topical Antiseptic.

See page

Amer. Brit. Chem. Supplies, Inc., 180 Madison Ave., New York. 24D
Barrett Co., 40 Rector St., New York. 5C
Dow Chemical Co., Midland, Mich. 8-9C
Heyden Chem. Co., 50 Union Sq., New York. 13C
Huisking & Co., Chas. L., 155 Varick St., New York. 15C
Mallinckrodt Chem. Wks., 3600 N. 2 St., St. Louis. 20-23C
Merck & Co., Rahway, N. J. 26-27C
Monsanto Chem. Wks., 1724 S. 2 St., St. Louis. 30-32C
Morgan & Co., Clarence, 355 W. Ontario St., Chicago. 29C
N. Y. Quinine & Chem. Wks., 99 N. 11 St., Bklyn., N. Y. 33C
Cooper & Co., Chas., 194 Worth St., New York.
Gray & Co., Wm. S., 342 Madison Ave., New York.
Intern. Comb. Tar & Chem. Co., 200 Madison Ave., New York.
Jordan & Bro., W. E., 2590 Atlantic Ave., Bklyn. N. Y.

PHENOLPHTHALEIN.

$(C_6H_4OH)_2COC_6H_4CO$. Made by fusion phenol and phthalic anhydride in presence of sulfuric acid. White powder. Odorless; tasteless. Sp. Gr. 1.2765. M. P. Not below 258°C. Soluble alcohol, ether, alkalies; insoluble water. Grades:—U. S. P. (White); yellow. Containers:—Bottles; tins; cans; 50, 100, 250 lb. drums. Uses:—Dyes; Medicine in Habitual Constipation. Action:—Laxative.

See page

Mallinckrodt Chem. Wks., 3600 N. 2 St., St. Louis. 20-23C
Merck & Co., Rahway, N. J. 26-27C
Monsanto Chem. Wks., 1724 S. 2 St., St. Louis. 30-32C
Morgan & Co., Clarence., 355 W. Ontario St., Chicago. 29C
N. Y. Quinine & Chem. Wks., 99 N. 11 St., Bklyn., N. Y. 33C
Pfizer & Co., Chas., 81 Maiden Lane, New York. 36-37C
Benzol Products Co., Inc., 237 South St., Newark, N. J.
National Aniline & Chem. Co., 40 Rector St., New York.

PHOSPHORIC ACID.

H_3PO_4. Made by action of sulfuric acid on phosphate rock; high temperature reduction of phosphate rock with subsequent oxidation of phosphorus and solution of tentoxide. Colorless syrupy liquid. Sp. Gr. 1.884. M. P. 38.6°C. Soluble water. Grades:—Tech. (75%, 50%); U. S. P. 85%. Containers:—Bottles; barrels; carboys. Uses:—Preparation Phosphates; Ceramics; Fertilizers, Flavoring; Textiles; Medicine as Tonic in Dyspepsia; Cavies, Catarrh.

• • • • • • Sample page, reprinted from Section C • • • • • • •

LAUREL OIL.

Distilled from laurel leaves. Light yellow liquid, sweetish odor resembling cajuput oil. Constituents:—Cineol 50%. Sp.Gr. 0.915–0.932. Refractive Index: 1.467–1.477. Optical Rotation: −15 to −18°. Ester Content: 28–50. Acid Value:—Up to 3.0. Soluble 1–3 vols. 80% alcohol. Action:—Excitant; Narcotic. Used as perfume for External Remedies. Origin:—France, Germany, Palestine, Mediterranean islands.

See page

Chiris Co., Antoine, 147 Waverly Pl., New York. 6D
Dodge & Olcott Co., 180 Varick St., New York. 8–11D
Dreyer Inc., P. R., 26 Cliff St., New York. 7D
Fritzsche Bros., Inc., 78 Beekman St., New York. 15–17D
Lueders & Co., Geo., 427 Washington St., New York. 25D
Magnus, Mabee & Reynard, Inc., 32 Cliff St., N. Y. 27–29D
McKesson & Robbins, Inc., 79 Cliff St., New York. 24–25C
Silver Import Co., Geo., 461 Fourth Ave., N. Y. 36–37D
Stallman & Co., 11 Cliff St., New York.

LAVENDER OIL.

Distilled from flowers of Lavendula officinalis. Characteristics:—Colorless, yellowish, or greenish-yellow; Odor characteristic of lavender; taste strongly aromatic, slightly bitter. Constituents:—Linalool, linalyl acetate, geraniol, cumarin, furfurol, borneol. French:—Sp.Gr. 0.882–0.896 at 15°C. Optical Rotation −3 to −90. Soluble 2 to 3 vol. 70% alcohol. Steam distilled oil takes up to 10 vol. Linalyl Acetate content generally 30–40%, but in better oils, over 50%. Ester Content varies from 30 to 50% and higher. Oils with less than 30% linalyl acetate are adulterated. Refractive Index 1.460–1.464 at 20°C. Franco-Italian Alps have low ester content, low Sp.Gr. high Optical Rotation. Sp.Gr. 0.878–0.882. Optical Rotation −6 to −9°. Ester Content 20 to 30%. Soluble 10–12 vols. 60% alcohol. Constituents: Linalyl acetate 30–60%; linalool acetic ester, butyl acetate, acetic esters of valeric and caproic acids, linalool, geraniol in free state and as ester of acetic, butyric, valeric and caproic acids, coumarin. English:—Sp.Gr. 0.881 to 0.904 at 15°C. Optical Rotation −1° to −10°. Refractive Index 1.465 to 1.470. Ester Content 5 to 10%. Soluble 2 to 3 vols. 70% alcohol. Adulterants:—Pine oil, spike oil, terpenyl acetate, Bois de Rose acetylated, linalyl acetate from shiu oil. Origin:—Throughout the Mediterranean region, Maritime Alps of southern France, England. French production is from cultivated and wild plants, whereas in England the cultivated is employed exclusively. Uses:—Perfumery, lavender water, eau de Cologne, widely in soaps, the concrete oil giving the best results. Remarks:—Lavandin oil is now distilled from wild lavender.

Terpeneless

Concentration:—About 1.75 to 2 times that of the ordinary oil. Sp.Gr. 0.893 to 0.898. Optical Rotation about −5°. Soluble 15 parts per 100 parts of 60% alcohol; 55 parts per 100 parts of 70% alcohol.

Lavender-Spike Oil

Spike oil. Distilled from the flowering herb, Lavendula Spica. Characteristics:—Yellowish essential oil; odor camphor-like, suggestive of both lavender and rosemary. Constituents:—Camphor, borneol, camphene, cineole, linalool, geraniol. French:—Sp.Gr. 0.905 to 0.9176 at 15°C. Optical Rotation usually dextrogyrate to +6°44′, occasionally levogyrate to −2°. Refractive Index 1.464 to 1.468. Acid Value to 2. Ester Value 3 to 21 (usually below 10), after acetylation 102 to 112. Soluble 5 to 20 vols. 65% alcohol, in 1.7 to 3 vols. 70% alcohol. Spanish:—Sp.Gr. 0.904 to 0.922 at 15°C. Optical Rotation −4°30′ to +15°47′ (rarely above +8°). Refractive Index 1.46506 to 1.46535. Acid Value to 1.8. Ester Value 4.6 to 26.5, after acetylation 84 to 112. Soluble 1.5 to 2.5 vols. 70% alcohol. Dalmation:—Sp.Gr. 0.9022 to 0.9033 at 15°C. Optical Rotation −0°10′ to −0°53′. Acid Value 0.9. Ester Value 5.6. Soluble 4 to 5 vols. 60% alcohol and in 2 to 3 vols. 70% alcohol. Adulterants:—Turpentine oil, rosemary oil, Spanish oil of sage. Containers:—1, 5, 10 lb. bottles; 25 to 28 lb. tins; 55, 110 gal. drums. Uses:—Veterinary medicine; liniments. Origin:—Mediterranean countries; Southern France; especially common in Spain. No attempts have been made to cultivate spike. The spike flowers are fully developed about three weeks later than those of the lavender, namely toward the end of August. On account of their high growth the harvest is less laborious than that of lavender.

See page

Bush & Co., W. J., 370 Seventh Ave., New York. 2–3D
Chiris Co., Antoine, 147 Waverly Pl., New York. 6D
Dodge & Olcott Co., 180 Varick St., New York. 8–11D
Dreyer Inc., P. R., 26 Cliff St., New York. 7D
French, Inc., Benj., 160 Fifth Ave., New York. 13D
Fritzsche Bros., Inc., 78 Beekman St., New York. 15–17D
Givaudan-Delawanna, Inc., 80 Fifth Ave., N. Y. 19–22D
Lueders & Co., Geo., 427 Washington St., New York. 25D
Magnus, Mabee & Reynard, Inc., 32 Cliff St., N. Y. 27–29D
McKesson & Robbins, Inc., 79 Cliff St.. New York. 24–25C
Orbis Products Trading Co., 215 Pearl St., New York. 32D
Parento Compagnie, Inc., Croton-on-Hudson, N. Y. 33D
Pfaltz & Bauer, Inc., 300 Pearl St., New York. 35C
Polak's Frutal Works, Inc., 350 W. 31st St., New York. 34D
Silver Import Co., Geo., 461 Fourth Ave., N. Y. 36–37D
Ungerer & Co., 15 W. 20th St., New York. 40–41D
van Ameringen-Haebler, Inc., 315 Fourth Ave., N. Y. 42D
Wangler-Budd Co., 205 W. 14th St., New York. 43D
Belgian Trading Co., 211 Water St., New York.
Heine & Co., 54 Cliff St., New York.
Lautier Fils, 47 Cliff St., New York.
Norda Ess. Oil & Chem. Co., 121 E. 24th St., New York.

LEMON JUICE.

Concentrated

Concentrated approximately 3 volumes to one or 6 volumes to one. Action:—Antiscorbutic; Beverages. Usually preserved with Sulphur Dioxide or by pasteurization in bottles.

Fresh

Preserved with benzoate of soda with or without pulp or frozen solid. Action:—Antiscorbutic; Beverages.

See page

California Fruit Growers Exchange, Ontario, Calif. 4D
Florida Citrus Oil Corp., 206 S. Franklin St., Tampa, Fla.

LEMON OIL.

Limonis Oil; Oil Citron. Expressed from fresh lemon peel, the rind of the recent fruit of Citrus Limonum. Light yellow to yellowish-green liquid; agreeable odor of fresh lemons; taste aromatic, mild, and somewhat later, bitter. Constituents:—Citral; Limonene; Phellandrene; Levo and Dextropinene; Limene (Bisalbolene); Geraniol; Linalool; Esters; Aldehydes (Nonylic, Octylic and Decylic); Citraptene. Citral Content: 3.5–5%. Sp.Gr. 0.856–0.861 at 15°C. Refractive Index: 1.474–1.476 at 20°C. Optical Rotation +57° to +66°. Evaporation Residue: 2.1 to 4%. Slightly acid. Soluble in 0.5 to 1 vol. of 95% alcohol, with every proportion of absolute alcohol, ether, chloroform, benzene, amyl alcohol. U.S.P.:—Sp.Gr. 0.851–0.855 at 25°C. Refractive Index 1.4744–1.4755 at 20°C. U.S.P. requires that the refractive index of the first 10% distillate, distilled under specified conditions, shall be not less than 0.0020 and not more than 0.0027 lower than that of the original oil. Optical Rotation: +57° to +64°. The optical rotation of this distillate shall be not more than 5 degrees less than that of the original oil. The above requirement is a rigid one and discloses orange oil terpenes and some other foreign terpenes as adulterants. Soluble 1 in 3 vols. alcohol and as above. Adulterants:—Terpenes and citral from lemon grass. Grades:—U.S.P.; terpeneless, sesquiterpeneless; Sicilian, American. Containers:—25 lb. coppers; 1 lb. coppers; 25 lb. tins; 10, 5, 1 lb. tins. Uses:—Perfume and Toilet Preparations; Soaps; Flavoring Extracts; Flavoring Food, etc. Action:—Stimulant; Carminative. Origin:—Cultivated in Italy, United States (California and Florida). Time of Crop:—Italian, December to February; American, throughout the year.

Terpeneless

Concentration:—About 20 times that of the ordinary lemon oil. Distilled from natural oil of lemon. Pale, straw color. Constituents:—Citral. Sp.Gr. 0.896–0.903 at 15°C. Optical Rotation: −4° to −9°. Aldehyde Content:—Citral 40%–55%. Soluble in 10 to 20 vols. in

• • • • • • Sample page, reprinted from Section D • • • • • •

Allaire Woodward & Co., 2800 N. Adams St., Peoria, Ill.
Murray & Nickell Mfg. Co., 2608 Arthington St., Chicago.
Schoenegan & Co., John, 51 Ferry St., New York.

BAMBOO BRIER ROOT.

Virginia Sarsaparilla; Long-stalked Green Brier; American Chinaroot; False Chinaroot; Bullbrier; Smilax Tamnoides. Uses:—Alterative; Depurative. Origin:—Dry sandy thickets from New Jersey to Florida and west to Texas and Nebraska. Remarks:—In limited demand only.

See page

Hopkins & Co., J. L., 135 William St., New York. 2E
King & Howe, Inc., 11 Cliff St., New York. 3E
Peek & Velsor, Inc., 100 Gold St., New York. 5E
Penick & Co., S. B., 115 Fulton St., New York. 6-7E
Allaire Woodward & Co., Peoria, Ill.
McGuire Bros., W. Jefferson, N. C.
McLaughlin, Gormley & King Co., Minneapolis.
Murray & Nickell Mfg. Co., 2608 Arthington St., Chicago.

BARBERRY BARK.

Jaundice Berry; Wood-sour; Pepperidge-bush; Sourspine; Berberis. Bark of root of Berberis Vulgaris. Characteristics:—Slightly odorous; Taste bitter. Extraneous Matter:—Not more than 5% of over-ground part of plant or other foreign organic matter. Constituents:—Berberine; Berbamine; Oxyacanthine; Tannin; Wax; Fat; Resin; Gum; Starch. Containers:—Bales. Grades:—B. P. C. Action:—Bitter Tonic; Laxative; Febrifuge; Astringent. Uses:—Debility; Jaundice; Intermitten Fever; Dyeing Yellow; Source of Berberine. Origin:—Wild in Europe and Western Asia; U. S. (New England States, Pennsylvania, and Virginia).

See page

Hopkins & Co., J. L., 135 William St., New York. 2E
King & Howe, Inc., 11 Cliff St., New York. 3E
Peek & Velsor, Inc., 100 Gold St., New York. 5E
Penick & Co., S. B., 115 Fulton St., New York. 6-7E
Allaire Woodward & Co., Peoria, Ill.
Benkert & Co., W., 100 Gold St., New York.
McLaughlin, Gormley & King Co., Minneapolis
Meht & Daniel Corp., The, 99 John St., New York.
Murray & Nickell Mfg. Co., 2608 Arthington St., Chicago.

BAYBERRY BARK.

Wax Myrtle; Candle Berry; Candlewood; Wax-berry; Tallow Shrub; Myrica. Dried root bark of Myrica Cerifera. Characteristics:—Transversely curved strips, or quilled pieces; from 2 to 15 cm. long, 0.5 to 2 cm. wide, and from 1 to 2 mm. thick; outer surface reddish-brown. Odor distinct, aromatic; taste slightly bitter, astrigent, becoming pungent and acrid. Extraneous Matter:—Not more than 5% adhering wood or other foreign organic matter. Constituents:—Acrid Resin; Astrigent Resin; Myricinic Acid; Tannin; Gallic Acid; Red Coloring Matter; Gum; Starch; etc. Containers:—Bags. Grades:—Tech.; N. F. Action:—Alterative; Cholagogue; Astringent. Uses:—Diarrhea; Scrofulous; Jaundice. Externally in Ulcers, Sore Throat, Leucorrhea. Origin:—Wild in marshes, ponds, near coast from N. J., south to Florida, west to Texas and north to Valley of Washita River in Arkansas. Collection:—Late in fall, freed from dirt, bark separated and carefully dried. Remarks:—In reasonably constant demand.

See page

Hopkins & Co., J. L., 135 William St., New York. 2E
Peek & Velsor, Inc., 100 Gold St., New York. 3E
Penick & Co., S. B., 115 Fulton St., New York. 6-7E
Allaire Woodward & Co., 2800 N. Adams St., Peoria, Ill.
Henning & Son, H. W., 11 Cliff St., New York.
McLaughlin, Gormley & King Co., Minneapolis.
Murray & Nickell Mfg. Co., 2608 Arthington St., Chicago.

BAYBERRY WAX.

Bayberry Tallow; Myrtlewax. By boiling berries of Myrica (Candleberry, Bayberry, Wax Myrtle, Wax-berry, Tallow-shrub). The wax on the berries melts and floats. Characteristics:—Green Wax; bitter taste; feeble odor. Constituents:—Palmitin; Palmitic Acid; Myristin and Lauric Acid. Containers:—300, 200 lb. bbls.; 100, 50, 25 lb. boxes. Grades:—Tech. Uses:—Candles; Polishing Leather; Soaps; Ointments. Origin:—As of Bayberry Bark.

See page

Hopkins & Co., J. L., 135 William St., New York. 2E
McKesson & Robbins, Inc., 79 Cliff St., New York. 24-25C
Penick & Co., S. B., 115 Fulton St., New York. 6-7E
Bromund Co., E. A., 258 Broadway, New York.
Dey & Co., Wm. H., 11 Water St., New York.
Desvernine, R., 82 Beaver St., New York.
Lincks, Geo. H., 123 Front St., New York.
Scheel, Wm. H., 179 Water St., New York.
Strohmeyer & Arpe, 139 Franklin St, New York.

BEAR'S FOOT ROOT.

Stinking Hellebore; Helleborus Foetidus. Action:—Emmenagogue; Purgative. Uses:—Malarial Splenic Enlargements. Origin:—New York to Missouri and Southward.

See page

Hopkins & Co., J. L., 135 William St., New York. 2E
Peek & Velsor, Inc., 100 Gold St., New York. 5E
Penick & Co., S. B., 115 Fulton St., New York. 6-7E
Allaire Woodward & Co., Peoria, Ill.

BELLADONNA.

Deadly Nightshade; Banewort; Divala; Black Cherry Poison; Death's Herb. Dried leaves and flowering tops of Atropa Belladonna. Characteristics:—Irregular matted fragments. Leaves 5 to 20 cm. long, 2.5 to 12 cm., wide; upper surface dark green, under surface grayish-green; odor distinct, heavy; taste somewhat disagreeable. Extraneous Matter:—Not more than 3% of stems over 10 mm. (2.5′) thick. Sand and dirt increase ash content. Constituents:—Atropine; Hyoscyamine; Scopolamine; Chrystaropic Acid (Scopoletin); Succinic Acid; Chlorophyll; Pyridine; Belladonnine; Atroscine; Apoatropine (Atropamine). Containers:—Bags, variable size; boxes. Grades:—Tech.; U. S. P.; B. P.; Fr. Cod. Action:—Diuretic; Nervine; Mydriatic; Narcotic; Sedative; Antispasmodic; Anodyne. Uses:—Pain; Asthma; Nervous Cough; Incontinence Urine; Night Sweats; Convulsions; Neuralgia; Rheumatism; Mania; Gout (Requires caution in its use). Manufacture of Atropine and Hyoscyamine. Origin:—Southern and Central Europe, Asia Minor, Algeria; cultivated in N. America, England and France, Italy, Germany, Turkey, Poland, Czecho-Slovakia, Hungary. Cultivated and wild. Collection:—June and July, from plants 2 to 4 years old, when in full bloom. Remarks:—Roots, also used, are narcotic, mydriatic; sedative; antispasmodic; anodyne. They are collected in Autumn or early Spring. (U. S. P.; B. P.). Contains not more than 10% of stem bases and woody crown, and not more than 2% other foreign organic matter.

See page

Hopkins & Co., J. L., 135 William St., New York. 2E
Huisking Co., Inc., Chas. L., 155 Varick St., New York 15C
King & Howe, Inc., 11 Cliff St., New York. 3E
McIlvaine Brothers, Inc., 1516 Hamilton St., Phila. 4E
Peek & Velsor, Inc., 100 Gold St., New York. 5E
Penick & Co., S. B., 115 Fulton St., New York. 6-7E
United Chem. & Drug Corp., Bridgeport, Conn. 8E
Allaire Woodward & Co., Peoria, Ill.
Bamberger Bloch & Landesman, 35 Front St. N. Y. C.
Benkert & Co., W., 100 Gold St., New York.
Escho Corp., The, 250 Water St., New York.
Henning & Son, H. W., 11 Cliff St., New York.
McLaughlin, Gormley & King Co., Minneapolis.
Meht & Daniel Corp., 99 John St., New York.
Murray & Nickell Mfg. Co., 2608 Arthington St., Chicago.

BENNE LEAVES.

Sesamum Indicum. Action:—Demulcent. Uses:—Applicable in Diarrhea; Dysentery; Catarrh; Acute Cystitis; Strangury; etc. Origin:—Asia; cultivated in all parts of tropical world.

See page

Peek & Velsor, Inc., 100 Gold St., New York. 5E
Penick & Co., S. B., 115 Fulton St., New York. 6-7E
Allaire, Woodward & Co., Peoria, Ill.
Schoenegan & Co., John, 51 Ferry St., New York.

• • • • • • Sample page, reprinted from Section E • • • • • •

The National Wholesale Druggists' Association

Officers

President
James M. Penland.....Dallas, Texas
Southwestern Drug Co.

First Vice-President
H. G. Billmire.....Chicago, Ill.
Humiston, Keeling & Co.

Second Vice-President
E. H. De Moss.....Louisville, Ky.
McKesson-Peter-Neat-Richardson Co.

Third Vice-President
W. K. Love.....Memphis, Tenn.
McKesson-Van Vleet-Ellis Corp.

Fourth Vice-President
W. G. Allen.....Tampa, Fla.
Tampa Drug Co.

Fifth Vice-President
Peyton Hawes.....Spokane, Wash.
McKesson-Spokane Drug Co.

General Representative
F. E. Holliday.....New York, N. Y.
51 Maiden Lane

Secretary
E. L. Newcomb.....New York, N. Y.
51 Maiden Lane

Treasurer
Title Guarantee and Trust Co.....New York, N. Y.
176 Broadway

Washington Representative
W. L. Crounse.....Washington, D. C.

Board of Control

For One Year

T. O. Duff.....Chattanooga, Tenn.
McKesson-Duff Drug Co.

F. H. Garrett.....Council Bluffs, Iowa
Harle-Haas Co.

J. G. Smith.....Savannah, Ga.
Columbia Drug Co.

For Two Years

A. Kiefer Mayer.....Indianapolis, Ind.
Kiefer-Stewart Co.

W. L. Thompson.....Troy, N. Y.
John L. Thompson, Sons & Co.

J. W. Porterfield.....Sioux City, Iowa
McKesson, More & Porterfield

Sherwood Coffin.....San Francisco, Calif.
Coffin-Redington Co.

For Three Years

M. E. Sherman.....Des Moines, Iowa
Des Moines Drug Co.

Warner James.....Brooklyn, N. Y.
Towns & James

W. M. Brunswig.....Los Angeles, Calif.
Brunswig Drug Co.

J. Mahlon Buck.....Philadelphia, Pa.
Smith Kline & French, Inc.

ACTIVE MEMBERS
(Wholesale Drug Members)

Ahrens Brothers.....110-112 Market St., Wilmington, N. C.
Albers Drug Co.....400 State St., Knoxville, Tenn.
Alexander Drug Co...218-230 W. 1st St., Oklahoma City, Okla.
Apothecaries Hall Co.....24 Benedict St., Waterbury, Conn.
Aschenbach & Miller (Inc.).....400 North 3rd St., Phila., Pa.
Askew-Coulter-Owen Drug Co.,
200-202 Franklin St., Clarksville, Tenn.
Bailey Drug Co., The.....31 N. 4th St., Zanesville, O.
Baily & Son, James.....28 S. Hanover St., Baltimore, Md.
Bakst Brothers.....19-21 Greene St., New York, N. Y.
Beall & Steele Drug Co., The...424 Market St., Steubenville, O.
Behrens Drug Co., The.....219-229 S. Fourth St., Waco, Tex.
Bellamy & Son, Robert R....202 Market St., Wilmington, N. C.
Bindley & Co., E. H.....121-5 N. 5th St., Terre Haute, Ind.
Blumauer-Frank Drug Co.....150 N. 14th St., Portland, Ore.
Blumauer-Frank Drug Co.....Spokane, Wash.

• • • • • • Sample page, reprinted from Section F • • • • • •

Price Movements - Chemicals

		Jan.	April	1930 July	Oct.	Dec.	1930 High	1930 Low	1929 High	1929 Low	1928 High	1928 Low	1927 Ave.	1914
Sodium Benzoate, tins	lb.	3.05	3.05	3.05	3.05	3.05	3.05	3.05	3.05	3.05	3.05	3.05	3.20	3.15
Salicylate, tins	lb.	2.95	2.95	2.95	2.95	2.95	2.95	2.95	2.95	2.95	2.95	2.95	3.10	3.15
Calcium Bromide 100 lb. cs	lb.	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	.58
Carb. USP, 175 lb. bbls	lb.	.04½	.05	.05	.04½	.04½	.06½	.04½	.06½	.04½	.06½	.04½	.06	.06
Glycerophos, 250 lb. bbls	lb.	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.00
Hypophos, USP, 25 lb. cans	lb.	.60	.60	.60	.60	.60	.65	.60	.65	.60	.65	.60	.60	...
Iodide, 5 lb. bot	lb.	4.35	4.85	4.85	4.35	4.35	4.85	4.35	4.35	4.35	4.35	4.35	4.35	3.60
Lactate, USP, 500 lb. bbls	lb.	.45	.45	.45	.45	.45	.50	.45	.50	.45	.50	.45	.52	.38
Lactophosphate Soluble	lb.	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	.78
Powdered Tins	lb.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	.78
Insol powd. tins	lb.	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.93
Sulfide, USP, 100 lb. drs	lb.	.21½	.21½	.21½	.21½	.21½	.24	.21½	.24	.21½	.25	.20	...	.12
CAMPHOR, Jap. ref, slabs, 100 lb. cases	lb.	.63	.60	.60	.60	.60	.64	.60	.64	.59½	.66	.57	.64	.44½
Refined powd	lb.	.65	.62	.62	.62	.62	.66	.62	.66	.63	.70	.62	.72	...
½ oz. tab. 100 lb. cases	lb.	.70	.72	.72	.72	.72	.77	.72	.77	.73	.75	.68	.74	...
Liniment, bbls	gal.	2.20	2.20	2.20	2.20	2.20	2.30	2.20	2.30	2.20	2.30	2.20	2.25	...
Monobrom, 100 lb. cases	lb.	1.85	1.85	1.85	1.85	1.85	1.90	1.85	1.90	1.85	1.90	1.85	1.85	1.00
Casein edible 100 lb. kegs	lb.	.45	.45	.45	.45	.45	.55	.45	.55	.45	.55	.45	.45	...
Charcoal Animal medicinal jars incl	lb.	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50	...
Charcoal Wood, powd, 100 lb. bbls	lb.	.05½	.06	.06	.05½	.05½	.07	.05½	.06	.05½	.06	.05½	.05½	...
Chloroform, USP, 50 lb. drs	lb.	.25	.25	.25	.25	.25	.27	.25	.30	.25	.30	.28	.30	.19
Chloral Hydrate, USP, 25 lb. jars	lb.	.75	.78	.78	.75	.75	.80	.75	.80	.75	.80	.70	.77	.03
100 lb. drums	lb.	.55	.73	.73	.55	.55	.75	.55	.75	.70	.75	.65		.32
Cholesterin	oz.	5.50	5.50	5.50	5.50	5.50	5.85	5.50	5.85	5.50	5.85	4.00	4.00	6.50
Chromium Sulfate Scales, tins	lb.	.55	.45	.45	.45	.45	.60	.45	.60	.55	.60	.55	.55	.41
Powdered tins	lb.	.60	.50	.50	.50	.50	.65	.50	.65	.60	.65	.60	.30	.46
Chrysarobin, 50 lb. tins	lb.	3.75	3.75	3.75	3.75	3.75	4.10	3.75	4.25	3.75	4.25	3.65	3.65	2.40
Cinchonine Alk, 100 oz. tins	oz.	.38	.38	.38	.38	.38	.38	.38	.38	.38	.38	.38	.38	.08
Crystal	oz.	.43	.43	.43	.43	.43	.46	.43	.68	.65	.68	.65	.65	.13
Sulfate, 100 oz. tins	oz.	.25	.25	.25	.25	.25	.25	.25	.25	.25	.25	.25	.25	.06
Cinchonidin Sulfate, 100 oz. tins	oz.	.35	.35	.35	.35	.35	.35	.35	.35	.35	.35	.35	.35	.15
Cocaine Alk, USP, 1 oz. vial	oz.	11.07	11.07	11.07	11.07	11.07	11.07	11.07	11.07	11.07	11.07	11.07	10.65	3.85
Hydrochloride, USP	oz.	8.50	8.50	8.50	8.50	8.50	8.50	8.50	8.50	8.50	8.50	8.50	...	2.65
CODEINE Alk, 1 oz. vials, 10 lots	oz.	11.87	11.87	11.87	11.87	11.87	11.87	11.87	11.87	10.37	10.37	10.37	9.90	5.75
Hydrobromide	oz.	8.92	8.92	8.92	8.92	8.92	8.92	8.92	8.92	8.92	7.92	7.42	7.92	5.50
Hydrochloride	oz.	10.87	10.87	10.87	10.87	10.87	10.87	10.87	10.87	9.87	9.87	9.37	8.90	5.50
Nitrate, oz. vl. 10 oz. lots	oz.	9.80	9.80	9.80	9.80	9.80	9.80	9.80	9.80	8.30	8.80	8.30	8.80	5.50
Phosp. oz. vl. 10 oz. lots	oz.	9.42	9.42	9.42	9.42	9.42	9.42	9.42	9.42	7.92	8.42	7.92	7.60	5.25
Salicylate	oz.	8.25	8.25	8.25	8.25	8.25	8.25	8.25	8.25	6.75	7.25	6.75	7.25	5.25
Sulfate, oz. vl. 10 oz. lots	oz.	9.67	9.67	9.67	9.67	9.67	9.67	9.67	9.67	8.42	8.92	8.42	7.69	5.50
Colchicino Alk. USP, 1 oz. vl	oz.	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	28.15
Salicylate, 1 oz. vls	oz.	35.50	35.50	35.50	35.50	35.50	35.50	35.50	35.50	35.50	35.00	35.00	35.50	20.00
Cream Tartar, USP, 300 lb. bbls	lb.	.27½	.27½	.27½	.25½	.25½	.27½	.25½	.28	.26½	.28	.26	.25	.24
Imp powd. 224 lb. bbls	lb.	.25½	.25½	.25½	.25½	.24½	.25½	.24½	.27	.25½	.27½	.25½	.25	.24
Creosote, USP, 42 lb. cbys	lb.	.40	.45	.45	.40	.40	.47	.40	.42	.40	.42	.40	.40	.51
Carbonate, 150 lb.	lb.	1.50	1.50	1.50	1.50	1.50	1.60	1.50	1.60	1.50	1.60	1.50	1.60	...
Cresol, USP, 400 lb. drums	lb.	.20	.20	.20	.20	.20	.20	.20	.20	.20	.20	.20	.22	.53
500 lb. drums	lb.	.20	.14	.14	.14	.14	.20	.14	.20	.20	.20	.20	.21	.07
DIGITALIN Pure 1 oz. vial	oz.	15.00	15.00	15.00	15.00	15.00	15.50	15.00	15.50	15.00	15.50	15.00	10.63	6.25
Dover,s Powder, USP, 5 lb. tin	lb.	2.45	2.75	2.75	2.45	2.45	2.80	2.45	2.50	2.45	2.50	2.45	1.65	26.00
Duboisine Sulfate, 1 oz. vl	oz.	30.07	35.00	35.00	35.00	35.00	40.00	35.00	30.07	30.07	30.07	30.07	30.85	...
Emetine Alk, 15 gr. vial	oz.	.85	.85	.85	.85	.85	.85	.85	.85	.85	.85	.85	.07	45.00
Hydrochloride, USP, 1 oz. vl	oz.	35.00	25.00	25.00	25.00	25.00	36.00	25.00	36.00	35.00	36.00	35.00	32.70	1.80
15 grain vials	oz.	2.50	2.50	2.50	2.50	2.50	2.70	2.50	2.70	2.50	2.70	2.50	2.50	1.00
Epsom Salts, USP, 200 lb. bbls	100 lb.	2.25	2.25	2.25	2.25	2.25	2.50	2.25	2.50	2.25	2.50	1.85	1.95	1.00
Imp. 100 lb. bbls	100 lb.	1.95	2.30	2.30	1.95	1.95	2.35	1.95	2.00	1.95	2.00	1.95	7.60	5.50
Ergotin Bonjean 1 lb. jars	lb.	18.50	18.50	18.50	18.50	18.50	19.00	18.50	19.00	18.50	21.00	15.25	35.00	41.50
Eserine Alk, 1 oz. vials	oz.	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	40.00	40.00	40.00	25.50
Salicylate 1 oz. vials	oz.	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	25.50
Sulfate, USP, VIII 1 oz. vials	oz.	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	...	...
ETHER, USP, 55 lb. drums	lb.	.18	.16	.16	.16	.12	.18	.12	.18	.18	.16	.15	.13	.16
Anasthesia, 55 lb. drums	lb.	.23	.21	.21	.21	.21	.23	.21	.23	.23	.21	.20	.19	.16
Nitrous, 1 lb. bot	lb.	.80	.80	.80	.80	.80	.98	.80	.98	.80	.95	.95	.91	.48
Ethyl Chloride 200 lb. bot	lb.	.22	.22	.22	.22	.22	.24	.22	.24	.22	.25	.22	.24	...
Ethyl Iodide, 5 lb. bot	lb.	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	6.25	4.75
Formaldehyde, USP, 100 lb. cbys 1b. lwks	lb.	.10½	.09½	.09½	.09½	.07	.10¾	.07	.10¾	.09¼	.10	.07½	.11	.09½
Gall Extract	lb.	.20	.20	.20	.20	.20	.21	.20	.21	.20	.21	.20	.20	...
GLANDULAR SUBSTANCES, Duodenal Substance	1 lb. lots	5.50	5.50	5.50	5.50	5.50	5.50	5.50	...	...	...	...	...	...
Liver Substance (Hepatic)	1 lb. lots	4.50	4.50	4.50	4.50	4.50	4.50	4.50	...	...	...	...	...	...
Orchic Substance (Testicular)		4.75	4.75	4.75	4.75	4.75	4.70	4.75	...	...	...	...	...	...
Ovarian Residue	1 lb. lots	20.00	20.00	20.00	20.00	20.00	20.00	20.00	...	...	...	...	...	...
Ovarian Substance, whole	1 lb. lots	26.00	26.00	26.00	26.00	26.00	26.00	26.00	...	...	...	...	...	...
Pituitary Substance, whole	1 lb. lots	40.00	40.00	40.00	40.00	40.00	40.00	40.00	...	...	...	...	...	...
Pituitary Substance, Anterior lobe	1 lb. lots	27.00	27.00	27.00	27.00	27.00	27.00	27.00	...	...	...	...	...	...
Thyroid, USP	1 lb. lots	4.75	4.75	4.75	4.75	4.75	4.75	4.75	...	...	...	...	...	...
Oxgall Powder	1 lb. lots	1.35	1.35	1.35	1.35	1.35	1.35	1.35	...	...	...	...	...	...
GLYCERIN, CP. 550 lb. drums	lb.	.14	.13½	.13½	.13	.13	.14	.13	.15½	.13	.19	.15	.25	.19¼
Gold Chloride, bottles	oz.	12.00	12.00	12.00	12.00	12.00	12.50	12.00	12.50	12.00	12.50	12.00	12.00	10.15
Guaiacol, liq. USP, 100 lb. cbys	lb.	1.65	1.65	1.65	1.65	1.65	1.75	1.65	1.75	1.65	2.25	1.75	1.75	1.60
Crystals	lb.	2.25	2.25	2.25	2.25	2.25	2.50	2.25	2.50	2.25	2.50	2.25	2.25	2.75
Benzoate, 1 lb. bottles	lb.	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	...
Carbonate, 5 lb. boxes	lb.	1.70	1.70	1.70	1.70	1.70	2.50	1.70	2.50	1.70	2.50	1.70	2.50	2.55
Halazone, 5 lb. bot	lb.	2.75	2.75	2.75	2.75	2.75	3.25	2.75	3.25	2.75	3.25	2.75	2.75	...
Hexamethylenetetramine, USP, 100 lb. dr.	lb.	.50	.46	.46	.46	.46	.56½	.46	.62½	.48	.62½	.52	.60	...
Homatropine Hydrobrom, USP	oz.	14.50	14.50	14.50	14.50	14.50	14.50	14.50	14.50	14.50	14.50	14.50	14.50	87.00
5 oz. and 1 oz. vials	oz.	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50	87.00
Hydrastine Alk, USP, 1 oz. vial	oz.	20.50	20.50	20.50	20.50	20.50	21.00	20.50	21.00	20.50	21.00	20.50	20.50	21.50
Hydrochlide, USP, 1 oz. vials	oz.	20.50	20.50	20.50	20.50	20.50	21.00	20.50	21.00	20.50	21.00	20.50	20.50	21.50
Sulfate, 1 oz. vial	oz.	22.50	22.50	22.50	22.50	22.50	23.00	22.50	23.00	22.50	23.00	22.50	25.07	22.50
Hydrastinine Hydrochloride, USP, 15 gr. vials	oz.	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	...
Hydrogen Peroxide, USP, soln, 375 lb. bbls	lb.	.03¼	.03¼	.03¼	.03¼	.03¼	.04½	.03¼	.04½	.03¼	.05	.03¼	.04	.03¼
Hyoscine Hydrobrom, USP, 1 oz. vials	oz.	13.57	35.00	35.00	13.57	13.57	35.00	13.57	13.57	13.57	13.57	13.57	13.57	51.00
Hyoscyamine Alk, crystals, 1 oz. vials	oz.	25.07	25.07	25.07	25.07	25.07	25.07	25.07	25.07	25.07	25.07	25.07	25.07	14.00
Amorphous, 1 oz. vial	oz.	75.07	75.07	75.07	75.07	75.07	75.07	75.07	75.07	75.07	75.07	75.07	75.07	55.00
Hydrobromide, USP, 1 oz. vial	oz.	35.07	25.00	25.00	25.00	25.00	35.07	25.00	35.07	35.07	35.07	35.07	35.07	13.00
Sulfate, 1 oz. vial	oz.	25.07	25.07	25.07	25.07	25.07	25.07	25.07	25.07	25.07	25.07	25.07	25.07	13.00
Hypoquinone, 100 lb. kegs	lb.	1.20	1.20	1.20	1.20	1.20	1.25	1.20	1.25	1.20	1.25	1.25	1.25	.53
ICHTHYOL, tins	lb.	4.00	4.00	4.00	4.00	4.00	4.25	4.00	4.25	4.00	4.25	4.00	4.00	...
Iodide Arsenous, 5 lb. bot	lb.	5.20	5.20	5.20	5.20	5.20	5.20	5.20	5.20	5.20	5.20	5.20	5.20	3.70
ArsenousMercuric soln, 5 lb. bot	lb.	.26	.26	.26	.26	.26	.26	.26	.26	.26	.26	.26	.26	.16
Iodine, crude, 200 lb. kegs	lb.	4.35	4.35	4.35	4.35	4.35	4.35	4.35	4.35	4.35	4.20	3.88	4.20	3.30
Resublimed, 10 lb. tars	lb.	4.65	4.65	4.65	4.65	4.65	4.70	4.65	4.70	4.65	4.70	4.65	4.65	3.55
Tincture demis	gal.	4.50	4.50	4.50	4.50	4.50	4.85	4.50	4.80	4.50	4.65	4.55	4.65	...
Iodoform, powd, 10 lb. bot	lb.	6.00	6.50	6.50	6.00	6.00	6.50	6.00	6.00	6.00	6.00	6.00	6.00	4.00
Iron & Ammonium Citrate, USP, 50 lb. cans	lb.	.65	.65	.65	.65	.65	.66	.65	.66	.64	.66	.64	.67½	.54½
Chloride, USP, lump 400 lb. bbls	lb.	.06	.06	.06	.06	.06	.08	.06	.08	.06	.08	.05½	.05½	.06½

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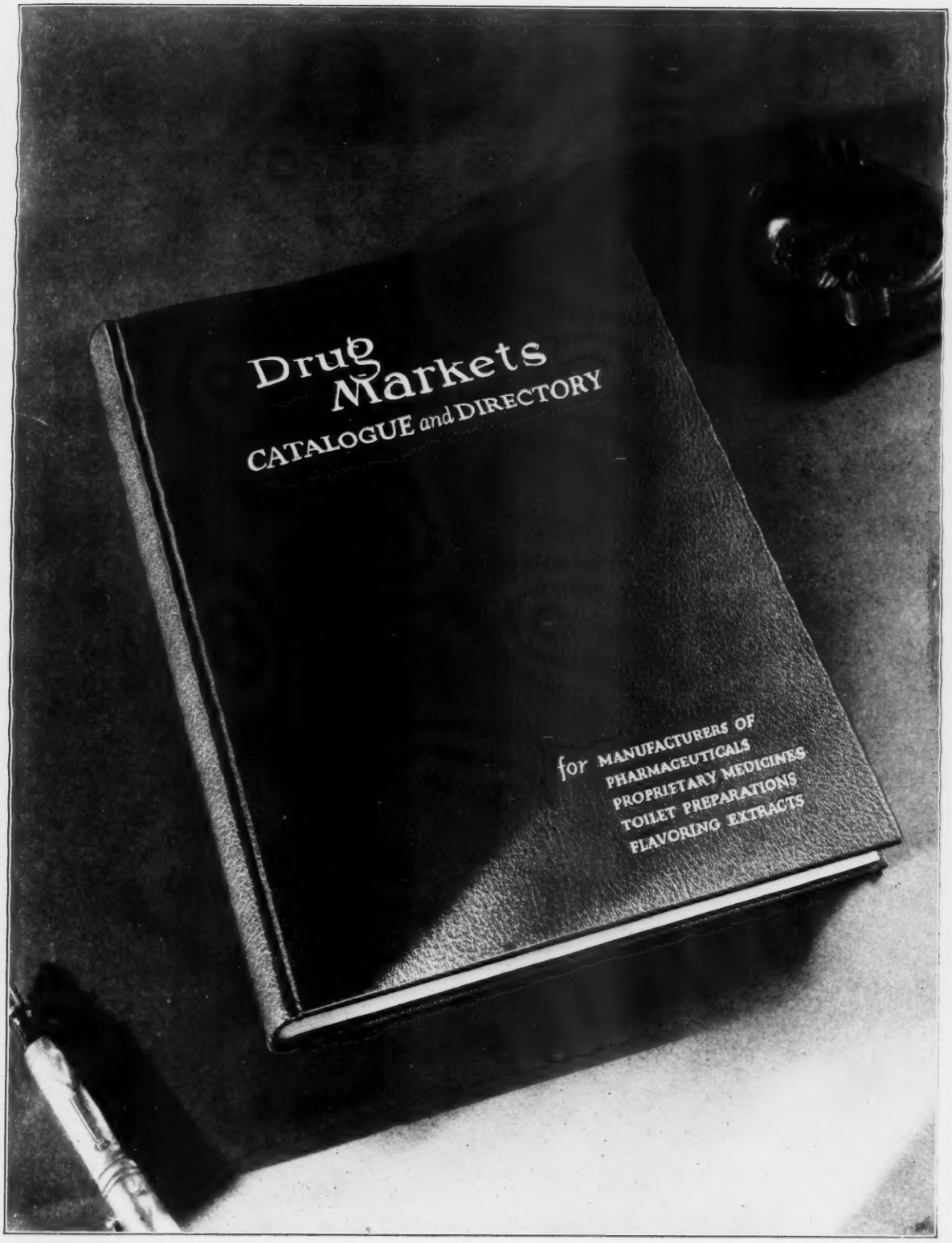

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New Low for Drug Stocks

The prices of common stocks of drug and cosmetic companies dropped to a new low for the year in the last week of April, according to the index of the Standard Statistics Company, of New York. Some recovery was made in the week ending May 6. Prices of 337 miscellaneous industries show a similar trend, though the recovery was somewhat smaller than in the case of the drugs and cosmetic companies. Detailed figures on both indexes follow:

1926 Average equals 100

	Drugs and Cosmetics	*337 Industrials*
Apr. 8	129.2	105.3
15	129.3	103.3
22	124.2	97.0
29	119.2	90.4
May 6	124.5	93.9
1931 High	138.8	114.7
Low	119.2	90.4
1930 High	174.7	174.1
Low	115.8	98.2

Gerard B. Lambert, a director and former president of Lambert Co. and Lambert Pharmacal Co., has been elected president and admitted to the board of directors and executive committee of the Gillette Safety Razor Co. He succeeds King C. Gillette.

Leghorn Trading Co., Inc., announce removal of their offices to Commerce Building, 153 East 44th st., New York.

Container Corp. of America reports net earnings for March quarter after all charges including interest but before depreciation at $82,068. After deduction of depreciation charges totaling $206,586, a net loss of $124,518 was shown for the quarter. In the corresponding quarter of 1930 net earnings after interest and charges, but before depreciation and taxes were $361,030, with a net profit of $133,866 after deduction of depreciation charges of $208,910 and Federal taxes of $18,254.

Arthur P. Bopf, president of the Bopf-Whittam Corp. of Westfield, N. J., has recently been elected vice-president of the Peoples Building & Loan Association of Elizabeth, N. J.

H. L. Murray has resigned from the Owens-Illinois Glass Co., effective May 1, to accept a position with the Sun Advertising Co., Toledo, Ohio. Mr. Murray has been associated with Owens-Illinois for the past five years.

Drug Inc. has declared regular quarterly dividend of $1 per share, payable June 1, 1931, to stockholders May 15, 1931.

Miss Adele Ungerer, daughter of Frederick H. Ungerer, president and treasurer of Ungerer & Co., New York, was married April 28 to Kenneth Garretson Voorhees of Plainfield, N. J. The wedding was performed at 4.30 o'clock in St. Peters Episcopal Church, Essex Fells, N. J. by the Rev. Harold Onderdonk, rector. Following the reception at the Essex Fells Country Club, the bride and groom departed for Bermuda.

J. D. Malcolmson, of Robert Gair Co. has been appointed a member of the standing committee in charge of recommendations on folding and corrugated boxes under the Division of Simplified Practices of the Department of Commerce. Mr. Malcolmson is the manager of the research engineering department of Robert Gair and previous to his association with this company devoted several years to research work in paper products at the Mellon Institute, Pittsburgh.

George W. Merck, president of Merck & Co., chemical manufacturer, New York, sailed May 5 with Mrs. Merck for an extended trip to Europe to be away about five weeks.

Drug Industry Stocks

1931 April 30 Bid	1931 April 30 Asked	1931 High	1931 Low	Annual Rate	
		NEW YORK STOCK EXCHANGE			
112 7/8	113	129 1/2	106 1/4	5.00	American Can
153	...	152 1/2	145	7.00	pfd
6 1/2	7	14 1/2	5 1/2		American Com'l Alcohol
57	57 1/2	64	47 1/2	4.20	American Home Products
2	2 1/4	4 1/2	2 1/8		American Solvents & Chem. Co.
4 1/2	5	11 1/2	5		pfd
43 1/2	44 1/4	50 1/2	43 1/2	2.50	Colgate-Palmolive-Peet Com
102 1/2	103	104	102		6% pfd
4 1/4	4 1/2	8 1/2	5		Container Corp. Class A
1 1/4	2	3	1 1/4		Container Corp. Class B
10 1/2	10 3/4	18	8 1/2		Coty, Inc
72 1/4	72 3/4	78 1/2	61 1/2	4.00	Drug Incorporated
78 1/4	79 1/2	87 1/8	76 1/8	8.00	Lambert Co
27 1/8	29 1/2	34 1/4	24	3.00	Lehn & Fink
12	12 1/8	17	11 1/2	1.00	McKesson & Robbins Com
31 1/2	32 1/2	37 1/8	29 1/2	3.50	pfd
22 1/2	23	26 1/2	18 1/2	1.25	Monsanto Chemical Co
30 1/2	30 1/2	39 1/2	28 1/2		Owens-Illinois Glass Co
28	32	35 1/2	23		People's Drug Store
14 1/2	14 3/4	21	12		Sharp & Dohme
58	60	61 1/2	53 1/4		Sharp & Dohme, pfd
32 1/2	33	77 1/2	30 1/2	2.00	U. S. Ind. Alc
...	...	...	...		pfd
1/8	1	2	3/4		Vadsco Sales
		NEW YORK CURB			
120	124	129 1/2	10	4.50	Ches. Mfg. Co
1/4	1/4	1/4	1/4		David Drug Stores Allot. Ctfs
1 1/2	2	3 1/2	1 1/2		Helena Rubenstein
8 1/4	12	13	11		Heyden Chemical Corp
...	...	7 1/8	6 1/2		International Perfume Com
...	...	71	67		$6 Cum. pfd
93 1/8	95 1/2	113 1/4	77	4.00	Mead-Johnson
3/8	1	1	3/8		Nauheim Pharmacies Com
1 1/2	4	2 1/4	1 1/8		pfd
14 1/2	16 1/2	42	12		Newport Co. Com
36 1/2	38 1/2	40	29		Northam Warren Corp. Pfd
26 1/2	27 1/2	30 1/2	26 1/2	1.45	Parke, Davis & Co
6 1/2	7 1/2	11 1/2	4		Stein Cosmetics, Com
6 1/2	6 1/2	7	5	.40	Vick Financial Corp
19 1/2	19 1/2	29 1/2	16 1/2		Walgreen Co., Com
13 1/2	13 1/2	15 1/8	8	1.00	Zonite Products Corp
		CLEVELAND			
49	50	51 1/2	45		Dow Chemical Co
104 1/2	104 1/2	105 1/2	101 1/2		pfd
19	19	19	18		Miller Wholesale Drug Com
15	15 1/2	15 1/2	11 1/4		Weinberger Drug Com
		CHICAGO			
38 1/2	39 1/2	39 7/8	35		Abbott Laboratories
21	21 1/2	25 1/2	16 1/2		Katz Drug Co., Com
1/2	1/2	1/2	1/2		Lane Drug Co. Com. VTC
1/2	1/2	15	1/2		Cum. pfd
		CINCINNATI			
12	12	14 1/2	12		Dow Drug Co
...	...	107	100		pfd
...	...	...	...		Standard Drug A
		BALTIMORE			
30 1/2	30 1/2	32 1/2	30 1/2		Emerson's Bromo Seltzer
		UNLISTED			
...	...	...	...		Heyden Chemical Corp. pfd
75	78	...	...	8.00	Merck pfd
...	...	...	...		Noxzema Chem. Co
...	...	...	...		Squibb Com
...	...	...	...		pfd

F. W. Miller, formerly vice-president of Rogers Brown & Crocker Brothers, Inc., has been appointed vice-president of Swann Chemical Co. in charge of the Cincinnati office recently established. He will be in direct charge of the sale of ferrophosphorus and will also handle sales of chemicals, abrasives, and lampblacks for the several Swann subsidiaries. J. R. Morehead, also previously with Rogers Brown & Crocker Bros., as assistant to Mr. Miller, has joined the Swann organization and will continue his association with Mr. Miller in the Cincinnati office.

Peoples Drug Stores, Inc., reports net income of $121,369 after taxes and charges in the March quarter. This was equal after preferred dividends to 66c a share on 123,743 shares of common and compares with net of $92,598, or 40c a share on 127,702 common shares, in the first quarter of 1930.

FINE HEYDEN CHEMICALS

Formaldehyde
Para Formaldehyde
Hexamethylenetetramine
Bromides
Benzaldehyde
Benzyl Chloride
Benzoic Acid
Sodium Benzoate
Creosote
Glycerophosphates
Guaiacol
Silver Salts

ACETYL SALICYLIC ACID
METHYL SALICYLATE
SODIUM SALICYLATE
SALICYLIC ACID
and
MINOR SALICYLATES

HEYDEN CHEMICAL CORPORATION

Factories:
Garfield, N. J.
Perth Amboy, N. J.

50 UNION SQUARE NEW YORK
180 N. Wacker Drive Chicago, Ill.

Squibb Reports Greater Sales

The annual report of E. R. Squibb & Sons, and subsidiary companies, shows increased sales and net profits of $1,571,648.67 for 1930. Profits as indicated are after absorbing $3,182,470.26 for advertising, the largest such expenditure in the history of the company, $233,497.06 for research, $386,603.51 in development of subsidiary corporations, Federal and other taxes and reserves and depreciation at the company's customary rate.

Earnings for the year were four and one-half times the preferred dividend requirements and two and three-quarters times the common. The common stock was placed on a quarterly dividend basis of 25c a share, and since 50c already has been paid, the remaining three-quarters will yield the stockholders $1.25 this year as against $1.00 in 1930.

Operation of the Squibb plan of profit-sharing resulted in an increase of more than 32 per cent. in direct purchases of Squibb products by participating druggists.

The outlook for 1931 is reported as very favorable. Sales for the first quarter of 1931 show a satisfactory increase and the net profit, after all charges and provisions for taxes, etc. including the usual increase in expenditure for advertising, shows more than 25% per cent. increase over comparable net profit for the parent company and its American and Canadian subsidiaries for the same period in 1930.

Commercial Solvents Corp. report net profit in the March quarter of $537,544 after depreciation, interest, Federal taxes and reserves, equal to 21c a share on 2,259,873 shares of common stock. This compares with earnings for the March, 1930 quarter of $750,492 or 30c a share on 2,481,232 shares.

Harvey Clark has taken a position with Foster D. Snell, Inc. to do supervisory work at the plant of Stonite, Inc., 103 Ninth st., Brooklyn, N. Y.

Coty, Inc., and domestic subsidiaries report for the year ended December 31, 1930, net income of $1,317,928 after depreciation, Federal taxes and other charges. This is exclusive of the company's equity in undistributed earnings of foreign subsidiaries amounting to $578,062. In the year ended December 31, 1929, net income was $4,058,297, excluding equity of $439,550 in undistributed earnings of foreign subsidiaries.

Zonite Products Corp. reports for March quarter net income of $333,506 after charges and taxes, equivalent to 39c a share on 845,556 no par shares of capital stock. This compares with net income of $244,674 in the first quarter of 1930, or 34c a share on 704,726 shares.

E. I. du Pont de Nemours & Co. report earnings in the first quarter of 1931 sufficient to cover all dividend requirements. Earnings applicable to the common stock were $11,163,934, or $1.01 a share on the average number of 11,065,762 shares outstanding. These earnings include dividends from their General Motors investment amounting to 68c a share on du Pont common. In the first quarter of last year earnings were $1.52 a share on the average number of 10,463,693 shares outstanding, which included dividends from the General Motors investment of $1 on du Pont common. Therefore the earnings on common, exclusive of income from General Motors investment, were 33c a share, as against 52c a share for the same period last year.

Petition in bankruptcy was filed by the Orphos Co. Inc., manufacturers of tooth paste, 135 William st., New York. Liabilities are listed at $150,541; assets $2,660. Principal creditors listed are Constance Co., $21,000; Philadelphia Advertising Co., $20,400; Passaic National Bank, $10,000; Wilckes-Martin-Wilckes Co., $4,664; Pennsylvania Collapsible Tube Co., $3,683; Athenia Steel Co., $3,500.

Vick Financial Gains

Vick Financial Corp. reports a liquidating value of $8.16 a share as of March 31, compared with $7.38 a share on December 31, 1930. The company announced that since the beginning of the year it has reduced its common stock holdings. On March 31, the corporation reports it held cash and government bonds aggregating $2,570,939, representing an increase over year-end figures. Cash alone is equivalent to $2.20 a share on the common stock, and compares with $258,216 cash and government bonds on December 31, equivalent to 22c a share on the present capitalization.

For the first quarter of 1931 the investment company reports a net income from interest and dividends of $100,839, and a profit and loss of $274,612. The company at the end of the first quarter had a reserve of $909,816 in excess of depreciation in securities.

American Commercial Alcohol Corp. report earnings for the quarter ended March 31 of $124,837, equivalent to 33c a share, compared with $175,349, equivalent to 45c a share for the corresponding three months of 1930.

Anchor Cap Corp. and subsidiaries report for the first quarter of 1931 gross manufacturing profit, before depreciation and income taxes, of $575,565, compared with $617,712 for a similar period in 1930. Net income for the three months was $192,294, after depreciation and federal taxes, as compared with $226,843 for 1930.

Monsanto Chemical Works and subsidiaries report for the quarter ended March 31 net profit of $255,378, after charges and Federal taxes, equivalent to 59c a share on 429,000 no-par shares of stock. This compares with $293,170, or 72c a share on 404,254 shares in the first three months of 1930.

McKesson & Robbins report profits for the first three months of 1931 were slightly above those of the first quarter last year, despite an 11 per cent. in dollar drop volume of sales, compared with last year, indicating that reduction in expenses had kept pace with the general decline in business.

Lambert Co. stockholders at their annual meeting elected Robert L. Lund, William P. Day and William C. Bird as members of the board of directors. A. A. Ballantine resigned as a director to permit his acceptance of the assistant secretaryship of the U. S. Treasury.

Leslie S. Gillette has been appointed advertising manager of U. S. Industrial Alcohol Co., and will in addition be responsible for the sales promotion of Pyro, the trademarked anti-freeze of the company. Mr. Gillette comes to U. S. Alcohol from J. Walter Thompson Co.

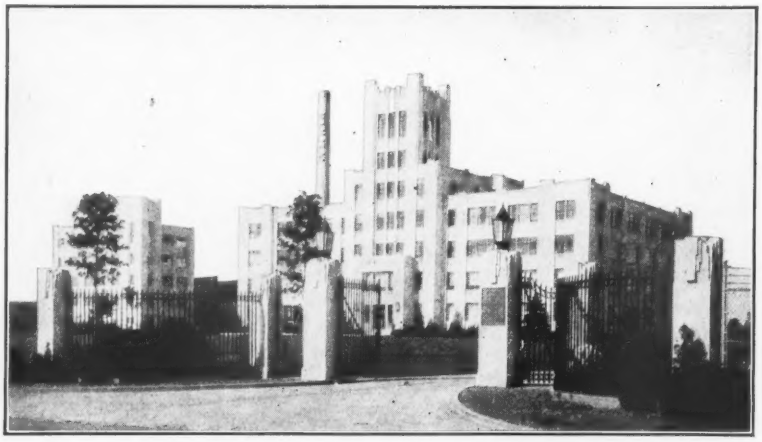
Druggists Magnesia Corp., New York, manufacturers of citrate of magnesia, has retained the chemical services of S. Blumenthal of the Shirley Laboratories, New York.

Thurston & Braidich, importer of vanilla beans, gums, and related products, New York, moved May 1, to 55 Vandam st. New telephone is Walker 5-2447.

Walgreen Co. and subsidiaries for the six months ended March 31 show net sales of $26,061,014. After provision for amortization of leaseholds and improvements, short life equipment, depreciation and Federal taxes, net profit was $855,894.

Robert C. Kelly, John Powell & Co. Inc., New York, just returned from a trip through the eastern part of Canada.

ROCHE



FINE
CHEMICALS AND ALKALOIDS

ARECOLINE
ATROPINE
BERBERINE
BRUCINE
CINCHONIDINE
CINCHONINE
COLCHICINE
DIGITALIN
EMETINE
EPHEDRINE
ESERINE
HYOSCINE
GUAIACOL
HOMATROPINE
HYDRASTINE
PILOCARPINE
QUINIDINE
SPARTEINE
YOHIMBINE

BARBITAL

QUININE and SALTS

STRYCHNINE and SALTS

SAPONINE

Hoffmann-LaRoche, Inc.
Makers of Medicines of Rare Quality
NUTLEY · · · · · · · · · · NEW JERSEY

Munson President of U. S. Alcohol

Charles S. Munson, recently made director of U. S. Industrial Alcohol Co., New York, was elected president at the organization meeting of the board, held April 23. Mr. Munson succeeds R. R. Brown, resigned.

At the same meeting, Glenn Haskell was elected first vice-president, and George Sykes was also made a vice-president. Other officers re-elected were as follows: Chairman of the board, C. E. Adams; vice-presidents, A. A. Backaus and S. Klein; secretary, Joseph Malone; treasurer, E. G. Fennessey; assistant secretary and treasurer, P. E. Barnett. With the exception of Mr. Munson, who succeeds Mr. Brown as a director, the board of directors remains unchanged.

Plastic Makers Combine

American Plastics Corp., with offices at 50 Union Square, New York, has been formed by the consolidation of three manufacturers of Casein plastics, the Erinoid Co. of America, a subsidiary of the Borden Co.; the Karolith Corp., and the Panplastics Corp., a subsidiary of the Heyden Chemical Corp.

The new corporation will concentrate its production activities in its plant in Bainbridge, N. Y. It will also operate a plant in Garfield, N. J., but will abandon the Karolith plant in Long Island City. Its sales operations will be in charge of Charles S. Lawrence, Jr. George Simon, vice-president of the Heyden Corp. has been made president of the new company.

Drug, Inc., Takes Peterman

Bristol-Myers Co., a subsidiary of Drug Inc., announce the formation of a new wholly-owned subsidiary called William Peterman, Inc., a Delaware corporation. The new William Peterman Co. bought certain of the assets, inventories, accounts receivable, good will, trade marks and patents owned by the former corporation known as William Peterman, Inc., a New Jersey corporation.

Principal products of the company that will now be marketed by Bristol-Myers include Peterman's Discovery, Flyosan, Peterman's Roach Food, and Peterman's Ant Food.

Chemical Industries Dinner

Salesmen's Association of the American Chemical Industry held its Seventh Chemical Industries Dinner at the Hotel Roosevelt, New York, May 7. Leaders of the drug and chemical industry attended this dinner which has become a regular feature of the biennial Exposition of Chemical Industries.

F. A. Koch, Dow Chemical Co., president of the association, introduced E. M. Allen, president of the Mathieson Alkali Works, who acted as toastmaster. The speaker of the evening was Dr. Arthur D. Little who discussed the value of research. Ira Vandewater, R. W. Greeff & Co., was chairman of the banquet committee.

The Roessler & Hasslacher Chemical Co., Inc., New York, April 27, has elected the following officers: Chairman of Board, W. F. Harrington; President, Hector R. Carveth; Vice-president, Mortimer J. Brown; Vice-president and Secretary, Colby Dill; Vice-president, Milton Kutz; Vice-president, E. A. Rykenboer; Treasurer, Albert Frankel; Asst. Treasurer, August Heuser; and three Assistant Secretaries, M. D. Fisher, E. A. Howard and J. Carlisle Swaim.

John Powell and Dr. Alfred Weed of John Powell & Co. Inc., New York, will attend the convention of the Insecticide and Disinfectant Manufacturers' Association to be held in Chicago, June 1, 2, and 3.

Coty Officers

Coty, Inc., has elected following new directors: Armand A. Petitjean and L. R. Marais of Paris, and Serge Heftler and George Sabran of New York. They succeed E. M. Jones, H. L. Brooks, Alphee Dubois and Henry R. Ickelheimer.

Questioning of officers by several stockholders revealed that Benjamin E. Levy, Chairman of the board, received a salary and bonus last year totaling $233,000. The dissenting stockholders disapproved Mr. Levy's contract because it provides him a percentage on the net sales of the company, regardless of how much the company makes. Mr. Levy's contract, however, was approved for another year.

Dr. Rosin on U. S. P. Committee

Dr. J. Rosin, vice-president and chemical director of Merck & Co., Rahway, N. J., has been elected a member of the committee of Revision of the United States Pharmacopoeia XI to fill the vacancy caused by the death of Edward V. Howell, dean of the school of pharmacy of the University of North Carolina.

Dr. Rosin took an active part in the revision of the pharmacopoeia as a member of the committees on the ninth and tenth revisions. He is considered an authority on pharmaceutical chemicals and has been identified with and largely instrumental in standardizing and improving the quality of reagent chemicals.

R. R. Brown Heads American Commercial

Russell R. Brown, who resigned as president of U. S. Industrial Alcohol Co. early in January, has been elected chairman of board of directors of American Commercial Alcohol Corp. It is announced that Mr. Brown has acquired a substantial stock holding in American Commercial and will devote a considerable portion of his time to its affairs. Mr. Brown is a well-known figure in the alcohol industry. He had been associated with U. S. Industrial Alcohol Co. for thirteen years, beginning his service in November, 1917, and continuing until the end of 1930.

April Advertising Off Slightly

Advertisers of drug and toiletries, with expenditures of $4,072,997, showed a slight decline in April of 1931 from the April 1930 total of $4,105,604. This decline amounted to only $32,607 or eight-tenths of one per cent., according to the Business Survey Department of Dorrance, Sullivan & Co., New York advertising agents.

In national magazines, manufacturers of drug and toiletries spent $3,551,839, of which total $2,466,741 was for beauty preparations and toilet goods, and $1,085,098 for medical and proprietary goods. This total for national magazines compares with $3,830,286 in April of 1930, a decline of $278,447, or 7.3 per cent. The total to date in 1931 amounts to $13,423,868 compared to $13,272,202 in the same period of 1930.

C. A. Mosso Laboratories, Chicago, manufacturer of "Oil-of-Salt" antiseptic, has appointed Porter-Eastman Co., that city, to handle its advertising account.

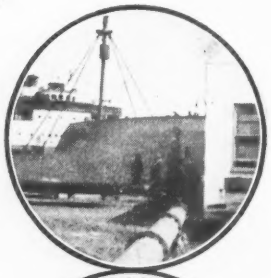
Theodore Weicker, executive vice-president of E. R. Squibb & Sons, is a member of the board of directors of the newly organized Cellulose Products Corp., New York.

Allen B. Wrisley Co., Chicago, has appointed the Arbogust-Maxwell Co., that city, to direct its advertising account.

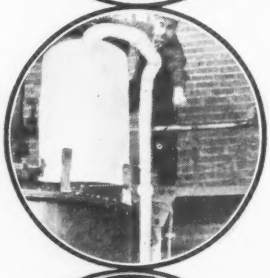
Col. Evan E. Kimble, president, Kimble Glass Co., Vineland, N. J., has reimbursed child depositors who lost their money in the recent failure of a Vineland bank. His total expenditure was $37,000. He loses $17,500 on the deal.

• DIVISION OF U. S. INDUSTRIAL ALCOHOL CO. •

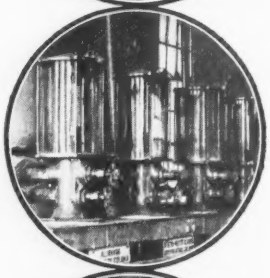
Four company-owned steamers deliver raw material direct to plant.



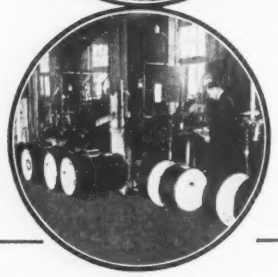
Special distillation process calling for absolute accuracy in control.



Tail box assembly in the anhydrous alcohol plant.



Filling room for drum shipments of solvent chemicals.



ANHYDROUS ALCOHOL

(Pure and Denatured Ethyl Alcohol)

(C_2H_5OH—99.8-100%)

SPECIFICATIONS

Color & Properties:
Clear, water-white liquid, characteristic odor

Constants:* *(for pure alcohol)*
Specific gravity: Not more than 0.7040 at 60/60°F.
Weight per Gallon: 6.62 pounds
Acidity: Free acid as acetic, not over 0.02%
Boiling Point: 78.4°C.

**Constants for Denatured Anhydrous Alcohol will naturally vary with the quantity and character of the denaturants but will approximate the above.*

Solubility:
Miscible with water without turbidity

Dryness:
When 10cc. of the alcohol is shaken in a stoppered tube with 0.5 gm. anhydrous copper sulphate the latter does not turn blue

Derivation:
Removal of water from ordinary 95% alcohol by a continuous process

Method of Purification:
Distillation

Grades:
Pure and Denatured (all formulae)

Containers:
Tank cars, 50-10-and 5-gallon steel or tin-lined drums, ½ litre bottles—36 to the case

Fire Hazards:
Alcohol is inflammable, having a flash point below 80°F. Precautions should be taken to keep flames away from its vapors

ANHYDROUS Alcohol, because of its total freedom from water content, is a valuable adjunct in the preparation of many pharmaceutical formulae where the presence of moisture is undesirable.

A patented and exclusive process of continuous distillation developed in the U. S. I. C. laboratories permits production of a practically pure anhydrous alcohol in any commercial quantity. Because of the affinity standard ethyl alcohol has for water it is not possible to produce anhydrous alcohol by ordinary direct distillation. Standard alcohol is 95% spirits by volume and 5% water. This water content is removed by chemical or physical means to produce anhydrous alcohol. Before development of the continuous distillation process, anhydrous alcohol was prepared by dehydrating standard alcohol with quicklime . . . a wasteful and tedious method.

May we send quotations? U. S. Industrial Chemical Co., Inc., 60 East 42nd Street, New York, N. Y. Branches in all principal cities.

U.S. INDUSTRIAL CHEMICAL CO., INC.

WORLD'S OLDEST AND LARGEST MANUFACTURER OF ALCOHOL CHEMICALS

Ethyl Phthalate. Butyl Phthalate. Nitrocellulose Solutions.

Amyl Acetate. Butyl Acetate. Ethyl Acetate. Ethyl Chloro Carbonate. Ether.

• DIVISION OF U. S. INDUSTRIAL ALCOHOL CO. •

Ipecac Prices Recover

THE position of ipecac root has changed radically since this time last month. At a time when there seemed to be no end to the offerings of the goods from the new source, Nicaragua, and at a time when no one wanted ipecac because the prices were falling almost daily, consumers and traders generally had no confidence in the future of the market and it was generally neglected. However, here is just another instance of how a comparatively small amount of money properly used will change the position of a raw material from weak to strong.

It is reported by those in possession of records going back thirty years, that the price of $1.10 at which some goods were sold, is lower than any price quoted during the entire thirty years. Just how long before that time such prices were quoted is unknown.

It must be appreciated that the declining market was not only due to general conditions, but also to the fact that a new source of ipecac opened up during 1930. This new source—Nicaragua—sent in very large quantities during 1930 and during the early months of 1931. To get some idea of the proportion of the imports from the new source let us examine import figures.

From Drug Markets Catalog and Directory we get the following record of imports:

Year	*Pounds*
1929	68,511
1928	59,357
1927	87,908
1926	72,247
1925	61,631
1924	76,669
1923	62,935
1922	54,589
1921	65,097
1920	93,515

Since in this country only the Cartagena root formerly only from Columbia, and now also from Nicaragua,—is used, while the Rio root imported from Brazil is mostly exported, it is interesting to know what proportion of the root now coming in is of the Cartagena variety.

During 1929 the imports of 68,500 pounds were divided into 53,000 pounds of Cartagena from Columbia, and 15,500 pounds of Rio from Brazil. During 1930, imports dropped off sharply in total, with only 43,000 pounds imported of which 37,000 pounds were of the Cartagena variety, and 6,000 pounds were Rio. But even the low amount of 37,000 pounds of Cartagena did not all come from Columbia, since during 1930 Nicaragua came into the field and shipped in 15,000 pounds, against 22,000 pounds for Columbia.

Up to the middle of May, 1931, estimated imports are placed at 25,000 pounds. Of this amount 7,500 pounds are Rio, and 17,500 pounds are Cartagena. But so far this year Nicaragua has passed Columbia as the principal supplier, since of the 17,500 pounds of Cartagena so far imported, only 6,500 pounds came from Columbia, while 11,000 pounds came from Nicaragua. Thus while total imports may be small, a new supplier offered the great bulk of the supplies at the low prices that were in effect. It may well be assumed that the extent to which the market declined was principally due to the competition between the two producing centers rather than to any generally depressed conditions that brought about decreased consumption

The season for ipecac, if such a thing exists from the point of view of production, extends from November through the first three or four months of the following year. During this period, shipments into this country are heavy, the remaining months showing much smaller quantities imported. This is said to be due to the fact that ipecac root is available along the river banks and must be collected at such times as the rivers recede from the banks. When the rivers are full of water, the collectors are unable to gather root. Naturally the collectors sell as much of the root as they can as soon as it is produced, and importers here take large quantities in during the period at which it is offered at low prices.

The consuming season, on the other hand, is said to extend from the Fall through the Winter and Spring. So in fact it largely parallels the producing season, although there has lately been a tendency for greater consumption to be noticed during the Spring than during the Fall and Winter.

But in the present market the reports indicate that there will not be much more ipecac available from the producing centres for the balance of the Spring and for the Summer. In fact no large lots are anticipated until the late Fall. If the producing centers as is reported, have stopped gathering the root and have shipped all their goods to this country, then those who are holding available supplies are in an excellent position. However, there are some who venture the opinion that there must be more goods available in producing centres, but cables for the most part have not brought a favorable reply.

An evidence of the strength of the present position is the exceedingly firm spot price of $1.35 per pound which is now in effect. It is expected as parcels of the goods now in this country pass into consumers' hands, further advances in prices will take place. The strong hands who have invested in the present supplies of ipecac are reported already to have made sufficient sales to permit them to carry the remaining goods for a long period in the face of no demand. It is to be assumed that there will be some resistance on the part of consumers to hold out against rising prices at the present time, but still goods for orders must be bought and thus far the amount of ipecac imported is certainly not excessive.

Undoubtedly there was much confusion among traders and importers during recent months as to the true position of the ipecac market. With Nicaragua producing in very large amounts and constantly reducing quotations to effect sales, importers and dealers were probably of the opinion that Columbia was producing an equally large amount of goods that would be available. With the very heavy imports from Nicaragua, which no one thought would exceed the amount of goods available from Columbia, it is easy to see how one would be misled. However, it now appears that Columbia did enter very strongly into competition with Nicaragua, but rather stepped out of the market and let Nicaragua force its own market down to a point at which a profit was very doubtful if at all likely. If this is the case, then it seems that the recent market was far too low and that higher prices can be expected to rule for some time to come.

New McKesson Directors

McKay Van Vleet, president of the McKesson-Van Vleet-Ellis Corp., wholesale druggist, Memphis, and J. C. Isdahl, of Isdahl & Co., producer of cod liver oil, Bergen, Norway, were elected directors of McKesson & Robbins, Inc., at the annual meeting of stockholders in Baltimore, April 14. They succeed Frank E. Bogart, of the McKesson-Fearrand-Williams Co., Detroit, and W. F. Geary, of McKesson, Kirk, Geary & Co., Sacramento, Cal.

It was stated by the management that this change in the directorate was in line with the company's policy of rotating officers of its subsidiaries in membership on the board.

Wine Tonic Restricted

As a result of a recent investigation conducted by agents of the United States Bureau of Industrial Alcohol, the sale of wine tonic has been restricted to bonified druggists, according to Joe Elfred, sales manager of the California Medicinal Wine Co., producers of Padres Elixir. This investigation, Elfred says, embraced the entire United States and was carried on for a period of months and brought to light the fact that a preponderous amount of the abuse in the sale of this type of product was found to be in other than bonified drug channels.

"4711" Companies Merge

Six years of litigation between Muhlens & Kropff, Inc., and Ferd. Muhlens, Inc., concerning the manufacture and distribution of the "4711" products of Cologne, Germany, has been ended by a merger of the two companies into a new organization known as Ferd. Muhlens, Inc.

Karl Kiefer Dies

Karl Kiefer, president of the Karl Kiefer Machine Co., Cincinnati, died in a hospital in that city, April 18.

Mr. Kiefer was born in Germany and came to this country and settled in Cincinnati forty years ago. He organized the Karl Kiefer Machine Co. in 1908. He devoted much time to research and was credited with 127 patents dealing with chemical machinery.

Mr. Kiefer left a widow, and two brothers who reside in Germany.

Supreme Court Hears Raladam Case

The United States Supreme Court, on April 24, heard arguments in the appeal brought by the Federal Trade Commission in its case against the Raladam Co., distributor of an obesity cure known as Marmola Prescription Tablets. The principal finding of the commission was that the company was guilty of unfair methods of competition in advertising that its remedy was safe and scientific when it contained dessicated thyroid, a patent and allegedly sometimes dangerous drug.

Dodge & Olcott Co., New York, has elected V. H. Fischer secretary to succeed the late J. H. Howe. J. A. Corson takes Mr. Fischer's place as assistant secretary. Both of these men have been with Dodge & Olcott Co. for a very long period.

Southern Alkali Corp. subsidiary of Pittsburgh Plate Glass Co. and American Cyanamid Co., has purchased 350 acres of land near Corpus Christie, Texas, as a site for a $10,000,000 commercial chemical plant.

J. H. A. Fink, export manager of John Powell & Co. Inc., has just returned from a three months' trip through Mexico. He reports conditions as being very favorable in that country.

Alcohol Steady

Alcohol, after its wide break of a month ago, is now reported as having entered the lists of those commodities indicated as routine. Sales have dropped considerably since the heavy contract period just past. Sellers report that, although there is very little doing, the schedules established after the decline are being maintained and are not subject to further shading. Blackstrap molasses is quoted on the New York Coffee And Sugar Exchange at 3.80c per gal. for May.

More Cinnamon Oil

Exports of cinnamon leaf oil from Ceylon have increased steadily from a total of 36,400 pounds valued at $42,900 in 1928 to 88,660 pounds valued at $108,000 in 1930. This increase was most marked during 1930, when producers began using the leaf for oil rather than fertilizer, because of the low prices for cinnamon and the stronger demand for leaf oil. The United States is becoming a more important purchaser of this product, taking over 60 per cent. of the Ceylonese export during 1930, as compared with about 30 per cent. during the two previous years. The United Kingdom and the Straits Settlements are declining in relative importance as market destinations, indicating an inclination toward direct purchases by American consuming industries and a slackening Continental demand.

Glycerin is reported as moving into consuming channels in a fair volume with prices well maintained. Deliveries, however, are mostly against existing contracts but stocks are not of a nature to cause distress if consumption does not advance.

Mercury is steady at the prevailing level of $102 and $103 per flask. Demand has been in small lots only but sufficient to maintain the present market level of prices. Production in the United States is reported as having been reduced. In spite of these apparently encouraging price stability factors rumors still persist in some quarters to the effect that all is not as well as would seem and that the near future will see lower prices.

Skullcap leaves have been reduced rather sharply to the basis of from 40c to 45c per lb. for Eastern, and 20c to 30c per lb. for Western. This represents a decline of 10c per lb. during the past month. New crop expectations are good causing somewhat of a flurry among dealers to move existing stocks.

Buchu is lower by 2c per lb. present qutoations being on the basis of from 21c per lb. to 22c per lb. Competition has been increased by the lack of an active consuming demand.

Agar agar is lower on spot with the No. 1 offered at from $1.05 to $1.10 per lb., and the No. 2 at from 95c to $1.00 per lb. Lower import costs are primarily responsible for the reduction. Demand has been exceptionally quiet even at the new level of prices and it would seem that buyers are still awaiting further reductions before making any commitments.

Dried raspberries continue very scarce and high at from 80c to 85c per lb. This commodity can be obtained only in small quantities. It will be necessary for existing stocks to be replenished from a new crop before an easier tendency can be expected in this product.

Zinc stearate U. S. P. was reduced 1c per lb. during the past month and is now quoted at from 18c to 20c per lb. as to quantity. Raw material has been weak and lower during the past two months accounting for the decline.

Psyllium Seed Steady

Psyllium seed continues to be very scarce and very high in the spot market. Dealers are asking from 70c to 75c per lb. for what black seed is available. Plantago seed, or blonde, is becoming increasingly important in this market and is offered at from 12c to 13c per lb. Quotations on this seed will hereafter appear regularly in the DRUG MARKETS price list.

During 1930 Italy exported 15,356 pounds of psyllium to the United States valued at $3,477. Considerable quantities of the seed originating in Italy are said to be shipped through France.

Assistant Trade Commissioner Paul L. Hooper, Calcutta, reports on psyllium seed production in India as follows: Three species of Plantago, known collectively as Spogel Seed, are familiar to Indian drug dealers; Plantago Ispagula P. Orata; Plantago Lanceolata; and Plantago Major, P. Syllium or P. Asiatica. The last is probably best known as the Indian variety of Plantago and is the most widely distributed, being found in Kashmir, Assam, Bhuttan, Bombay, and Nilgris. The plants grow best in a dry sandy clay soil and the seeds are ready for harvest in April and May. The plants, including roots, are pulled from the ground and hand-threshed by beating them against a frame of slender wooden rods. Seeds are available for export by July or August. Amritsar is the leading market, although Lahore and Karachi also share in the trade. Prices fluctuate between $3.65 and $4.45 per maund of 82½ pounds. Shipments are made in double gunny sacks holding about 168 pounds.

Digitalis leaves, although unchanged in price from the prevailing schedule of 12c and 13c per lb., is reported as weak at this level. Demand has been slowed up principally due to the fact that the larger manufacturing consumers had stocked up with low priced goods earlier in the year so that their future requirements are well taken care of.

Calendula is competitive and easier at the prevailing level of 35c per lb. Buying has been in a small way with dealers willing to accept reasonable bids for prompt shipment.

Chamomile flowers continue in a strong position, particularly Hungarian, which are still undersupplied. Some quarters are still without stocks of this grade. Quotations are very steady at 25c and 26c per lb. in spite of the fact that inactivity in demand is reported. Should an increased demand set in the price would undoubtedly move upward at once.

The price of Spanish saffron has been reduced during the past month to the basis of $11.00 to $11.25 per lb. The demand has been on the basis of very small lots only and it is reported that competitive conditions have forced reductions. It is also reported that one seller has shown a desire to get more business and has been willing to shade quotations as an inducement.

St. Ignatius beans continue in very small supply with some dealers being unable to quote on this commodity. The available supply is therefore in a few hands who are holding out for 65c per lb. or thereabout. One source, however, has been found willing to quote slightly below this figure.

U. K. Drug Exports

Reexports of crude drugs from the United Kingdom amounted to $1,230,100 in 1929, constituting about 30 per cent. of total crude drug imports. The chief recipients of the products reexported are the medicinal industries of the United States and Continental Europe. Exports of native English crude drugs, although small, are increasing, having a total value of $47,162 in 1929 as contrasted with $29,741 in 1927. The largest transshipment items are ipecac root, cinchona bark, aloes, and senna. Ipecac root is purchased by British merchants chiefly in Brazil and Uruguay and over 20 per cent. of the import is reexported. Germany, France, and the United States are the principal destinations of shipments. The cinchona bark import, the bulk from Java, is transshipped, mainly to France. Of $133,000 worth reexported in 1929, shipments to France were valued at $110,905. Aloes are imported mainly from the United States and the Union of South Africa. Imports, however, totaled only 682,865 pounds, valued at $73,650 in 1929, of which $58,540 worth was reshipped, mainly to Germany. Of the senna imported into the United Kingdom, 70 per cent. is secured from British India, with smaller quantities from Egypt and the Sudan. Germany was the largest single transshipment destination, having taken 60 to 70 per cent. of the re-exports of this commodity each year. Of total senna imports valued at $285,665 in 1929, $147,000 worth was reexported.

Peppermint leaves are again easier both here and in the West. Price has been reduced to from 55c to 65c per lb. a decline of 10c. There has been no support from buyers with both the primary and spot stock holders desirous of reducing their stock as new crop prospects appear very favorable. At the new low level there has been some indications of stabilization, but even at these levels buying will have to improve in order to strengthen the situation.

The replacement for cardamon is reported as being the lowest for several years. Decorticated has been reduced on spot to from 60c to 62c per lb. While the bleached is easier in the primary no reduction on this grade has been made on spot with offerings being made at from $1.25 per lb. to $1.35 per lb.

Buying of senega is at a very low level. A new crop is just ahead so that the dull consuming market is expected at this season of the year. Buyers seem to be awaiting primary market developments before making any commitments. Quotations remain unchanged with a tendency toward an easy tone.

Although the market for valerian root is lacking in active consuming demand an increase of 1c per lb. has been made by leading dealers in this commodity. This places the root on the basis of from 12c to 14c per lb. Stocks here are not over large and there is some doubt reported as to the size of the new crop in Belgium this year.

Predictions of a gain in the new crop of aletris root has stimulated competition in the spot market as dealers are anxious under the circumstances to move existing supplies. Under the stimulus of this competition the spot quotations have been reduced to from 26c to 27c per lb.

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Market Facts From Grasse

¶ Jasmine Still Sore Spot

¶ Lavender Future Dark

¶ May Rose Half Normal

¶ Violet Gathering Ended

By O. C. Zilisch

Our Grasse Correspondent

EACH year in Grasse, like in other cities of the region, there is held a battle of flowers. This season's battle of flowers in Grasse, held toward the middle of April, lacked in the usual color, for the reason that floats of some of the largest distilling perfumers were conspicuous by their absence. On all sides could be heard the comment that this year's battle of flowers was not bad, taken as a whole, but that the gaily decorated floats of the larger distilling perfumers had given to the battle of other years a colorful effect that was lacking this season. Then could be heard the statement that the crisis in the Grasse region had effected everyone, even to the point of keeping the big distilling perfumers from doing their usual bit in connection with the *bataille des fleurs*, an event looked forward to by all of Grasse and the surrounding country.

True, the crisis reported in previous issues of DRUG MARKETS seems to continue, and the general feeling remains one of keen discouragement to the growers of perfume-flower plants. If anyone has any doubts as to the facts in the case and feels that the perfume-flower growers are only bluffing when it is reported that they are planning to undertake the growing of the more ordinary cultures, like salads, artichokes, and so on, then all he has to do is to listen in on some of the conversations at the agricultural association meetings. Here one will find presiding, in an honorable capacity at least, an official of the government, an official who is studying the economic situation of the Grasse region. As one of these officials put it recently: "The farmer in the Grasse region may get only 25 centimes for a salad, but that is *real* money, small as it may seem, whereas if he has to depend on his jasmine this year he stands a good chance of receiving nothing at all."

The jasmine situation remains the sore spot with many in the Grasse region, although the lavender situation is none too brilliant, and about which more will be said later on in this report. As one authority puts it: "The marasmus is complete." That is not a half-way statement. There may be some exaggeration in the way the growers feel, but the fact remains that they feel that way about it.

A number of the distilling perfumers are still under contract with a group of growers to pay them 12 to 14 francs per kilogram (48 to 56 cents) for the jasmine flower. This state of affairs is, however, impossible this year, due to the large amount of jasmine stocks still in existence, and, therefore, the distilling perfumers have offered to pay to the growers under contract a flat price of 5 francs per kilogram (20 cents), with the understanding that the growers will not gather in their yields this season. This solution of the problem was accepted almost unanimously by the growers, as it will give them something, at least, without forcing them to gather in the yields for this year at what might be termed a complete loss.

As several persons close to the situation have pointed out, this solution seems practical enough. But, when the actual facts are taken into consideration, it will be seen that those growers under contract form only a comparatively small group, leaving the non-contract growers, cooperators and large distilling perfumers who also have large plantations of their own. In other words, these three categories are not protected in any way by the ruling established on the 5-franc basis, and up to the present time no one will venture even a guess as to what will happen in this connection. Only time can tell, but one thing is certain and that is that the present situation points to a distinct lowering in jasmine production during the next two or more years. Every effort is being bent in this direction, and the prices that will be offered by the distilling perfumers to those growers desiring to gather in some of their yield are already known to be below any figure that could promise the growers even a fair return on their investment. In the meantime the tearing out of plantations, particularly those with a bit of age, continues apace.

One of the bogeys bothering many in the Grasse region is that of synthetic aromatics, and a campaign is being waged in the strong agricultural publications to force a mention on all synthetics that they are synthetics and not natural oils. The campaign has taken form particularly in connection with lavender, which has, as everyone in the trade knows, gone through a distinct crisis the past year or more.

There has been, it is true, an amelioration of the situation on lavender recently, and things are not so bad as they were for a time. In fact, oil of lavender, having seen a decline after the gathering in of yield, now shows a brisker tone, with a sudden rise of something like 15 francs (60 cents) per kilogram, a rise representing almost 20 per cent on the prices, extremely low, which ruled the last of January.

According to several of the perfume industry publications in France, the depression on lavender has hit the bottom, and that the market is actually stabilizing itself, after months of instability. The rise on lavender is regarded as being a very favorable omen among the trade in France, for the reason that lavender is regarded as being practically the index oil of the market. As pointed out, the movement one way or the other of lavender usually carries with it the linalol group: bois de rose, petit-grain, bergamot, etc. At any rate, a healthy amount of optimism reigns.

In certain sections, however, it would appear that the situation is anything but good, the optimism slightly tinged with doubt. Some of the cooperatives are said to have decided that they will not distill any lavender this season, due to the stocks in existence, the low price paid, high price of labor, etc. These cooperatives have signalled their intention of doing what they can to sell their flowers, taking what they will bring. They will, however, not open the distilleries, unless the situation changes for the better in the meantime.

The market remains without any great activity, apart from the rise reported above. Everything is being done to bring lavender oil to the fore, and to have it used for a number of other

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things besides the compounding of perfumes. Its antiseptic qualities are being advertised far and wide, with the result that in certain directions the demand for lavender has been stimulated. One large American concern uses a great deal of lavender coming under this category, and this firm is enjoying a big sale on a product containing a good type of 48 per cent. lavender. Certain French outlets have also activated the market some.

Time for the May rose is approaching, and, as reported from time to time, the yield for this season is expected to show up as comparatively small. The plantations have beep neglected, generally speaking, and the aspect of a number of plantations is not too good. Provided no frost is met with, the production is predicted as about half the normal. Weather conditions the first part of April were perfect, but for about ten days the cold brought with it a great deal of anxiety. In the mountain regions around Grasse there was snow. There is but little danger now from the cold, although the weather conditions throughout all of France have shown a great variation this past year, and there is no telling what may occur within the near future.

The perfumers' syndicate has not, as yet, fixed the price, but it is thought that the 2-franc (8 cents) per kilogram mark would not be passed. This price for the rose is very low, as anyone can see, and a diminution of the rose plantations in the Grasse region is counted upon as being cetrain during the next few years.

Reports on the orange flower seem to be favorable from practically all districts in the South of France, and, generally speaking, the aspect of this culture is regarded as being satisfactory. The yield will, however, it is believed, not be as large as originally predicted. Warm weather of any duration during the month of May will cause serious damage, due to many of the trees being late in flowering.

The Vallauris section, famous for its orange trees, reports that the orange trees are in bloom throughout parts of that district. In certain of the warmer sections, near Golfe-Juan, the gathering has already begun on a small scale at this writing. Insofar as

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yield is concerned, the Vallauris region looks foreward to a harvest quite below the average.

It has been noticed that a considerable number of herbaceous shoots have made their appearance to the detriment of the normal flowering of the orange trees in the Vallauris district. This development is regarded as being remarkable, in view of the damage done the orange trees in the Vallauris section during the cold spell of 1928-29. In fact, a number of the trees that had suffered severely during that adverse winter seem to be coming back in a thoroughly surprising way. Naturally, this does not apply to the trees that were utterly destroyed by the cold, but those which were thought badly damaged. This development does not, however, aid the owners of the orange trees in any way for this season, as, in many instances, it has served to hinder the flowering along normal lines.

The price of the orange flower has not been fixed, as yet, there being a difference of view among the distilling perfumers. A large part of the production is taken over by the cooperative Nerollium, and any fixing of the price will take into consideration the requirements of this organization. However, it might be said that it is thought that the price for the orange flower this year will go to about half that of last year, or to 5 francs (20 cents) per kilogram.

Violet gathering for the perfume industry has ceased, and the prices paid remained comparatively low, something like 15 francs (60 cents) for the Parma and 5 to 6 francs (20 to 24 cents) for the so-called bouquet violet. On the whole the yield was small, and, although the prices paid are below the normal, they are considered by the growers as being, at least, passable.

The jonquil gathering has also terminated, and the price fixed by the perfumers' syndicate was 4 francs 50 centimes (18 cents) per kilogram, delivered to the distilling perfumer's place of business. This price is regarded as being wholly derisive, covering no more than the bare expense of gathering. In other words, the jonquil yield brought in nothing at all this year to the growers.

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Because of the fact that the prices offered were too low, the meadow and mountain (poeticus) narcissus received no attention this year. Neither of these cultures was gathered.

Much campaigning is being done in connection with the olive trees of Southern France. Even the Paris papers are lamenting the passing of the ancient, attractive olive tree, saying that it would be a shame to see the day come when the olive tree would be cut down to furnish firewood. The reason given for the decline in interest is the success of peanut and other oils, as already reported in previous issues. Olive oil is regarded as a luxury by many persons, with peanut oil taking a place that olive oil used to fill.

During the month of March considerable activity developed on the olive oil market of Nice, due to large amounts of olive oil leaving for foreign countries.

The olive trees in the Grasse region, if properly cared for, will, no doubt, continue to develop a satisfactory aspect. It is still too early to say definitely just what the situation as to crop will be this season.

Tansy oil is another item that has been reduced as a result of the desire on the part of both the primary market and spot dealers to reduce carryover stocks. The new crop is now in sight and shows prospects of being of ample proportions. Material can be obtained on spot at from $2.60 per lb. to $2.75 per lb.

Patchouli oil was reduced during the past month to $4.65 and $5.00 per lb. as to quantity. Ample stocks for present and future requirements are on hand. Demand has been light and irregular resulting in increased competition and the desire to turn existing stocks into ready cash.

Erigeron oil is freely offered at $1.25 per lb. which represents a decline during the past month. Carryover is reported as rather heavy so that with new crop prospects on the horizon a desire to sell has shown itself. Demand continues poor and irregular.

A sharp decline took place during the past month in oil ginger. Spot quotations were marked down to the basis of from $4.35 to $4.50 per lb. It is reported that raw material is being obtained at prices that represent low figures for several years. This makes possible the low figures being asked for the oil in the New York market.

The spot market price of from 45c to 48c per lb. for sweet almond oil represents a decline for this commodity during the past month. The smallness of the orders being booked and the irregularity of the consuming demand in general necessitated a revision in price.

Cassia oil is in plentiful supply with the market being marked down to from 95c to $1.00 per lb. This represents a reduction of 5c per lb. during the past month. The market is reported as still being subject to shading from these levels on a good sized order.

Peppermint oil is lower on the spot market at the rather attractive price of $1.70 and $1.80 per lb. as to quantity. Raw material is easier with the resulting decline in the cost of production being passed along. It is likely that this commodity will continue at rather low levels as the prospects for the new crop are good.

A buyer's market prevails in pimento oil with spot quotations down to $1.60 and $1.75 per lb. as to quantity. Import costs have been easier and a marked increase in competition has been noticed.

Menthol Weakens

Menthol is weaker on the spot at from $3.65 to $3.75 per lb. This is 10c per lb. below that prevailing at time of our last report. The primary market continues stronger than the market here and in some cases replacement costs are above the resale price in New York. However, this condition has not decreased the amount of importations as the commodity is coming in quite freely so that no lack of supplies is anticipated here for some time. Interest is routine with the competitive factor prevailing to the extent that the spot market failed to respond to conditions in the primary.

Consul Howard Donovan, Kobe, reports that the combined quantity of menthol crystals and peppermint oil carried over from 1929 was about 80 tons. Total production of both commodities was about 520 tons in Hokkaido and 114 tons in the other islands, giving a total supply of about 714 tons. Of the latter amount, 260 tons of crystals and 256 tons of oil were exported, while loss in weight and domestic consumption accounted for about 100 tons. About 98 tons remained to carry over to 1930. The distribution of Kobe's exports of menthol and peppermint oil during the calendar year 1930 were as follows:

Destination	*Menthol Tons*	*Peppermint Oil Tons*
United States	142	105
Europe	24	67
India	20	6
Other countries	74	78
Total	260	256

Prices for menthol and peppermint oil were lower throughout 1930, with the exception of a sudden rise in the price of menthol during May, June, and July, owing to heavy speculative purchases by Japanese dealers. Prices for peppermint oil rose slowly but steadily during the first half of 1930, then slowly declined until October, and in November and December dropped by about 20 or 25 per cent. This sudden collapse was due to the withdrawal of buyers and the desire of some dealers, who had made speculative purchases in the summer months, to realize on their stocks. During January and February of 1931, prices advanced steadily stimulated by some unexpected and large purchases. During the last three days of February, about 250 to 300 cases (15,000 to 18,000 lbs.) changed hands, Great Britain and the Continent having been the principal buyers.

Wormseed has been reduced to from $2.80 to $3.00 per lb. marking a somewhat sharp decline during the past month. The primary market, reported as being in need of ready cash, has offered this commodity at a concession so that dealers here have been able to replace stocks at lower figures.

Spearmint continues weak with another reduction taking place during the past month. Spot quotations are now at the level of from $1.90 to $2.20 per lb. With a new crop in sight both the primary market and spot dealers have been anxious to move this commodity. Stocks are ample and it is reported that as buying has been in a small way a good sized order could be placed at a price better than the above.

Ceylonese exports of Papain in 1930 amounted to 79,338 pounds, having a value of $167,400, as compared with 128,463 pounds valued at $234,450 in 1929, and 125,684 pounds worth $336,700 in 1928. The United States was the leading country of destination taking about 90 per cent. of the total exports in 1928 and 1929 and 78 per cent. in 1930. Shipments in Great Britain and France increased in 1930.

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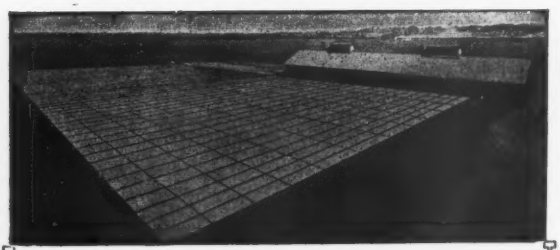

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PIONEER T.L.

Geranium Still Uncertain

WHILE there is more reason now than there was a month ago to believe that a cyclone occurred in Reunion and caused damage to some of the geranium oil there, there is now quite some variation in the reports as to what part of the crop was damaged and just how it will affect the market.

One story tells us that oil in the drums was damaged. Others tell us that the plants were damaged and there will be no further distillation of oil until October or November. Still another story direct from a shipper in Reunion states that there was a cyclone which caused damage to the plants in the unprotected regions. This report indicates that those plants protected by mountains were not damaged. This report makes the further statement that it will not be necessary to delay distillation until Fall but that further distillation will occur during June.

Naturally with sellers of the oil receiving these conflicting reports, there are all manner of views as to future prices, and as a consequence all manner of prices quoted. One important seller known for a generally conservative attitude in changing prices on such reports, states that he has recently had two advances from the primary market and has made two advances in his spot quotations. This house names $5.00 to $5.50 per pound.

Another house which always carries large stocks of geranium oil in this country has never hesitated to sell oil to its competitors at practically the same quotations. This house has no faith in a rising market for geranium and backs up its statement by selling all comers. This house quoted $4.00 per pound, and says that business has been done by others on occasions as low as $3.90.

The feeling that the rise is mainly the result of manipulation persists in large measure. In fact it is quite definitely reported that the large consumers who are generally well acquainted with the true conditions of the market have withdrawn from the market. It is expected that these buyers will remain completely out of the market for about six weeks and see if the market can be supported without their bids. Naturally these buyers do not want to buy in an uncertain market that may have been advanced sharply by more artificial causes than natural ones. They will not buy at present levels until some real strength is definitely revealed.

The African oil remains above the lower quotations for the Bourbon oil being quoted in reliable places at $4.5% on spot. This market seems to be running along in a manner that would lead one to suspect that those who are most interested in it are waiting to see what will happen in the Bourbon market. Although it is generally possible to obtain a higher price for the African oil than for the Bourbon, consumers can change from one to the other in most cases. Therefore, it is likely that the two oils will stay within striking distance of each other as regards price, and that a shortage or over-supply of one will not be without its effect upon the market value of the other.

From present reports the market will continue to be quoted nominally as at present due to the unwillingness of buyers to enter the market for any large amount of supplies until the situation resolves itself. A nominal market is generally a dangerous one for a buyer to enter although occasionally purchases made at such a time are advantageous.

Citrus Oils Remain Low

The citrus oils failed to show any improvement during the past month with the general tendency toward the weak side. Bergamot is particularly weak as the cost of replacement has been lower. Spot quotations range from $1.65 to $2.30 per lb. according to seller with reports current that dealers are inclined to accept bids of a reasonable nature to move the commodity.

The reported agreement between the consortium of bergamot producers and Messina exporters has not been concluded as yet as exporters demand 18 lire per Sicilian pound and producers 25 lire. Another item of interest in this market is the report that an Italian royal decree was recently issued and published in the Official Gazette formally announcing the constitution of the General Bergamot Warehouse at Reggio Calabria in connection with the regulations and measures taken by the government to promote exports of essential oil of bergamot. It has an initial capital of 2,000,000 lire. It can readily be seen that efforts are being taken to rescue the Italian Citrus Oil market from the rather chaotic condition in which it finds itself. It remains to be seen whether these efforts will be successful.

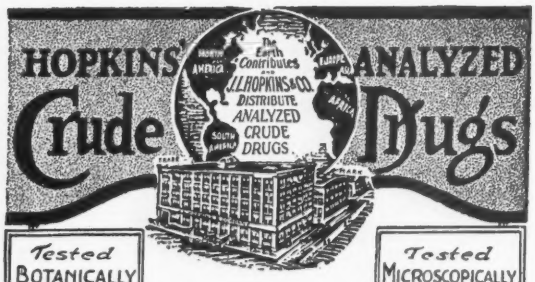
Lemon oil is rather firm in both the spot and primary market in that there have been no further reductions. The past month, however, has been a period on which buyers showed a surprising lack of interest.

Orange oil has also experienced a period of small consuming request. Prices have been maintained in general at existing levels but the undertone is toward the easy side.

Consul Howard K. Travers, Palermo, and Robert R. Bardford, Messina, report quotations on March 28 per Sicilian pound at Messina were as follows: Lemon (sponge), 7 to 7.75 lire; lemon (machine), 4.75 to 5; sweet orange (sponge), 20.75 to 21.25; mandarin (sponge), 28.50; and bergamot 18.50 lire. (Sicilian pound equals 317 grams; average value of lire is $0.0524 United States currency.)

Lime Oil Continues Upward

Lime oil continues to advance and is now offered at the high figure of $10.50 and $11. per lb. This represents an advance of 50c during the past month. As reported in previous issues of this publication production has been insufficient to take care of requirements so that the continuance of the upward tendency in this oil is not unexpected. The large consuming season, soft drinks, is now at hand so that there is very little likelihood in view of the circumstances that this oil will be any easier for some months to come. There is a possibility, however, that prices will go still higher before they go any lower. Cables from abroad continue as firm as in the past several months which would indicate that conditions have not improved in the primary market. Expressed oil is dull and unchanged but price is steady.



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Cod Liver Oil Remains Strong

Cod Liver Oil is steady on spot at the prevailing market of from $30 to $31 per bbl., with the undertone substantially strong. The shortage in Norwegian oil production continues with the fishing due to end very shortly.

A late report from Bergen states that the fishing at Lofoten has now finished, and the result for Lofoten alone amounts to 65,100 tons of cod and 33,779 hectol. of cold-liver oil, against 127,200 tons of cod and 54,966 hectol. of oil at the same date last year. The only fishing now going on is at Finmarken, where the captures are uneven and consist mostly of haddock.

The total result for the whole country amounts up to date:

1931	31.2	millions	cod,	with	52,885	hectol.	of	cod	liver oil
1930	55.5	"	"	"	74,176	"	"	"	"
1929	65.4	"	"	"	81,499	"	"	"	"

According to a report from U. S. Trade Commissioner Gudrun Carlson, of Olso, attempts are being made to improve the taste and quality of Norwegian cod-liver oil. One firm in Norway advertises the oil combined with concentrated fruit juice, giving an orange flavor. Experiments are being made at the State Vitamin Institute to perfect methods of testing and controlling the quality and vitamin content of the oil. The bottling and labeling of cod-liver oil before shipment from Norway is now done to some extent in order to preclude any possibility of diluting or misrepresenting the quality of the oil after it has left the country. Norway supplies approximately 67 per cent. of the cod-liver oil imported into the United States in 1929; total imports amounting to 2,860,000 gallons $2,445,000 and in 1930 the imports were 2,895,000 gallons $2,230,000.

Production of Newfoundland cod-liver oil, as the result of the small short catch and the low price paid for livers, was much less during 1930 than in 1929 and fully 50 per cent. below the 1928 figures. The estimated production of 180,000 imperial (216,000 U. S.) gallons in 1930 was valued at $198,000 (about $1.10 per gallon); the exports to the United States, including some poultry oil, totaled 203,000 U. S. gallons, against 216,000 gallons in 1929.

Arabic Continues Downward

Gum arabic continues the decline that set in at about the time the new crop began to arrive at the collection depots. The spot market is now 9½c to 10c per lb. and this low price is due not only to the fact that the crop now being gathered is the largest in several years but also to a falling off in the demand in the world's largest consuming markets.

Assistant Trade Commissioner Gabriel D. Ferrante, Cairo, reports that total arrivals of gum at all markets in the Kordofan Province during January amounted to 2,325 short tons as against 1,455 short tons during December. Moderate quantities of the new crop are arriving. Arrivals in El Obeid market totaled 845 tons compared with 501 in December. The aggregate value of gum sold at El Obeid market during the month amounted to $44,400 as against $33,475 in December. The average price per 100 lbs. at El Obeid was about $2.80 as compared with $3.35 during December.

Revised Pyrethrum Figures

Revised estimates of the 1930 pyrethrum flower production in Japan place the total at 7,500 short tons, as compared with former estimates of 7,350 tons. There was a carry-over of 1,033 tons from the 1929 crop.

Exports during the calendar year 1930 amounted to approximately 4,000 short tons, while domestic consumption required 3,125 tons, leaving 1,408 tons to be carried over to 1931. The United States took more than three-fourths, or 3,145 tons, of the total exports, the remainder going to Australia and Europe.

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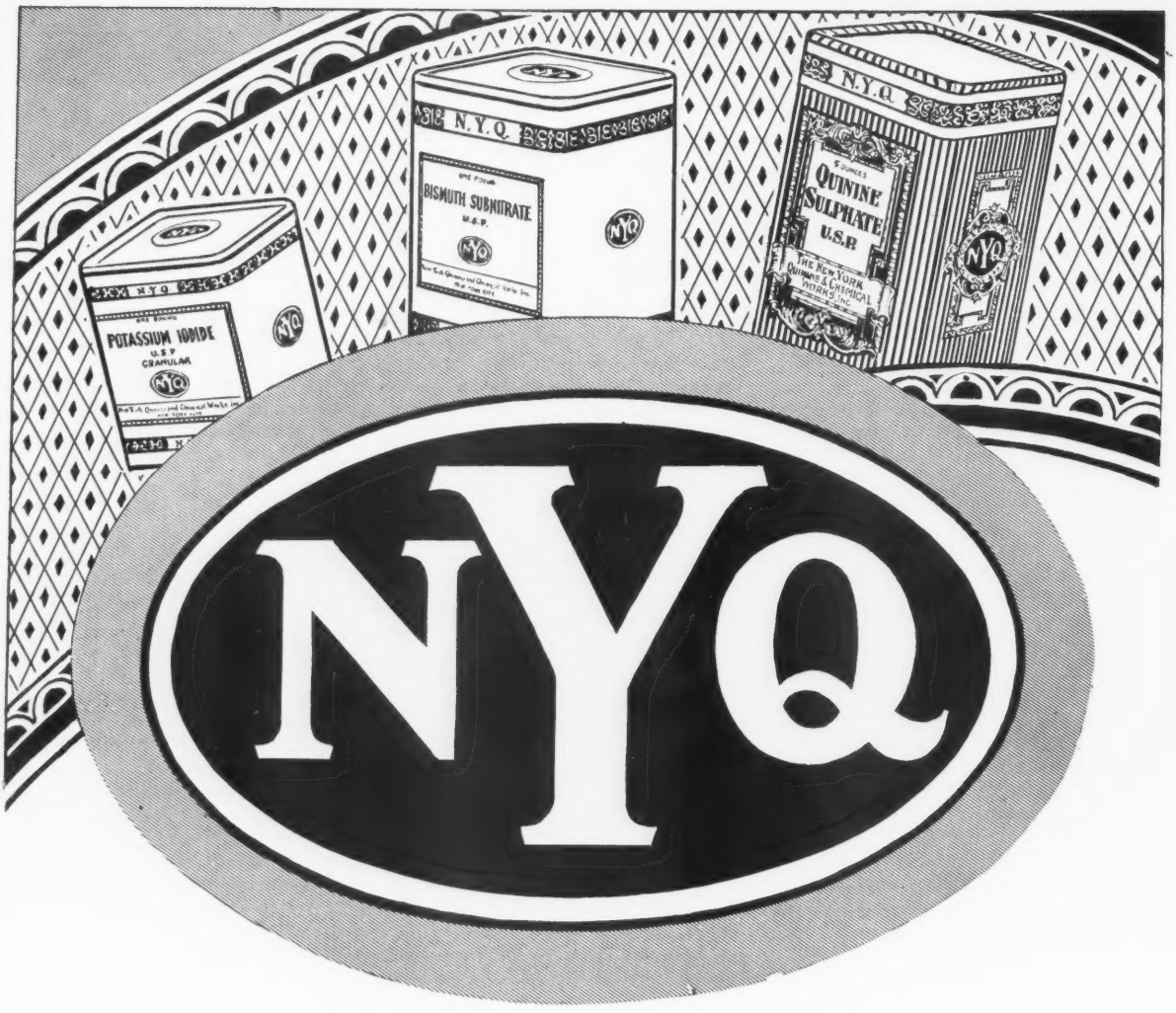

Acetanilid	Cinchonidine	Quinidine
Bismuth Subnitrate	Morphine Sulphate	Thymol
Bismuth Subcarbonate	Ethyl Morphine	Salicylates
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Cinchona Alkaloids	Glycerophosphates	Bromide of Soda
Cinchophen	Opium	Bromide of Potash
Codeine Sulphate	Potassium Iodide	Bromide of Ammonia
Codeine Phosphate	Quinine Sulphate	Silver Salts

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Medicinal, Aromatic, and Photographic Chemicals, Crude Drugs, Spices, Essential Oils and Concentrates, Miscellaneous Raw Materials, etc.

Chemical prices quoted are of American manufacturers, spot New York, f. o. b. for immediate shipment, unless otherwise specified.

Products sold f. o. b. works are so specified. Imported chemicals are so designated. Resale stocks, when a market factor, are indicated "second hand."

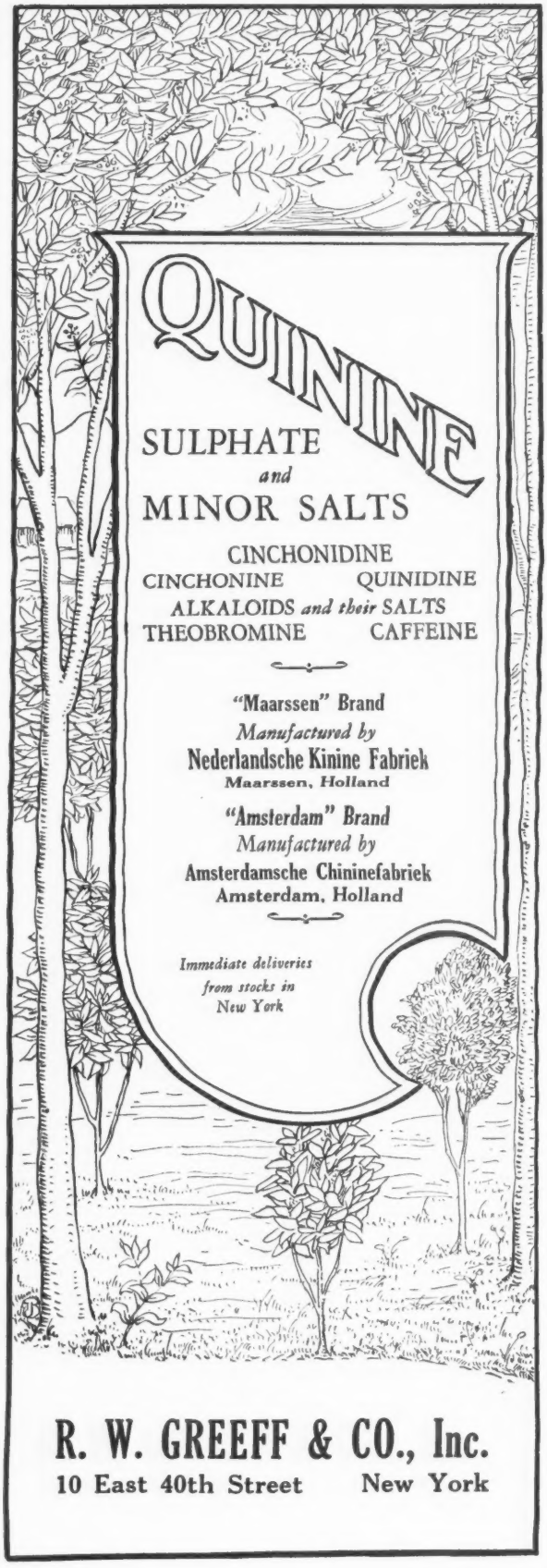
Crude Drugs and Essential Oils are quoted f. o. b. New York (Manhattan with limitations) for immediate shipment.

The range of price given is not "bid and asked," but are prices of different sellers, based on varying grades and/or quantities. Containers named are original packages most commonly sold.

Acetanilid
Hyoscyamine Sulfate

Chemicals

Acetanilid, USP, 200 lb bbls..lb	.24	.25
Acetone, pure 350 lb drs wks..	.12	.14
Acetphenetidin, 225 lb bbls..lb.	1.25	1.30
ACID, Acetylsalicylic, 225 lb ....bbls.	.85	.90
Agaric, 1 oz vials.....oz	...	3.50
Arsenous, USP, 220 lb bbls lb.	...	.18
Benzoic, USP, 100 lb bbls..lb.	.60	.61
Boric, 300 lb bbls.....lb.	.09½	.10
Cacodylic, 5 lb. bot.....lb.	...	8.00
Camphoric, USP, VIII 1 lb bot.....lb.	4.82	4.82
Carbolic, USP, crys 112 lb tins.....lb.	.17	.18
Cinnamic, 5 lb cans.....lb.	3.25	3.50
Citric, USP, crys 230 lb bbl .....lb.	...	.37
USP, crys imp. 112 lb keg .....lb.	.41	.43
USP, powd 200 lb bbl...lb.	...	.37½
Diethylbarbituric, 1 lb bot lb.	4.00	4.50
Gallic, USP, 150 lb bbls..lb.	...	.74
Glycerophosphoric, 25% 1 lb bot.....lb.	1.40	1.75
Hydriodic, USP, 10% 5 lb bot.....lb.	...	.70
Hydrobromic, USP, 40% 155 lb. cbys.....lb.	...	.55
Hypophosphorous, USP, 30% .....lb.		
5 gal demis.....lb.	...	.85
Lactic, USP, VIII 100 lb cbys lb.....	.53	.59
USP, X 100 lb cbys.....lb.	.57	.59
Phenylcinchonic.....lb.	...	3.25
Phosphoric, USP, Syr 70 lb drs.....lb.	.14	.15
Pyrogallic, crys 5 lb cans..lb.	1.30	1.40
Resublimed, 5 lb cans...lb.	1.60	1.70
Salicylic, USP, 100 lb bbls.lb.	.40	.45
Stearic, double pressed, bags .....lb.	.12½	.13
Triple pressed, bags,....lb.	.14½	.15
Succinic, 100 lb bbls.....lb.	...	1.35
Sulfurous, USP, 6% 100 lb cbys.....lb.	.05	.06
Tannic, USP, fluffy 50 lb bbls. .....lb.	.90	.93
Powd 200 lb bbls.....lb.	.80	.85
Tartaric, USP, 300 lb bbls.lb	.32	.33
Aconitine, Alk, crys 1 oz vials .....oz.	...	30.00
Amorphous, 1 oz vials....oz.	...	20.00
Adeps Lanae, hyd 350 lb bbls lb.	.14½	.15
Anhydrous, 350 lb bbls....lb.	.15	.16
Agaricin, 1 oz vis incl.....oz.	...	2.32
ALCOHOL, Benzyl, 5 lb bot lb.	1.20	1.35
Ethyl, USP, 190 pf 50 gal bbls.....gal.	2.69½	2.79½
Pure tax free.....gal.	.61	.69
Grain drums.....gal.	2.69	2 79
Denatured, (drums included) add 5c for bbls.		
No. 1 spec.....gal.	.27	.35
No. 5 comp.....gal.	.27	.35
23 a, spec.....gal.	.30	.38
39 b, spec.....gal.	.39	.47
40 m, spec .....gal.	.33½	.42½
Isopropyl refd 98-99% drs .....gal.	.95	1.25
Phenylethyl, 1 lb bot.....lb.	4.30	4.50
Aloin, USP, 100 lb cases....lb.	1.73	1.78
Aluminum Acetotartrate kegs .....lb.	...	1.60
Amidipyrine, 10 lb boxes....lb.	4.25	4.45
AMMONIUM, Acetate 100 lb kegs.....lb.	.38	.40
Benzoate, USP, 1 lb bot...lb.	...	1.27
Borate, 10 lb bot.....lb.	...	.35
Bromide, USP, 450 lb bbls.lb.	.38	.39
Imported, 112 lb boxes..lb.	.39	.41
Carb, USP, lump 100 lb kegs .....lb.	...	.13½
USP, powd 100 lb kegs..lb.	...	.14½
Citrate, 100 lb kegs.....lb.	.90	1.30
Ichthyolate, as to brand..lb.	4.00	4.50
Iodide, USP, 25 lb jars...lb.	...	5.20
Phosphate, dibasic 250 lb bbls .....lb.	.48	.50
Salicylate, USP, 100 lb kegs .....lb.	1.15	1.20
Valerate, USP, 25 lb jars...lb.	2.75	2.90
Amylene Hydrate, 1 lb bot..lb.	...	7.10
Antipyrine, USP, 100 lb cans.lb.	2.25	2.60
Apomorphine Hydrochloride, ¼ oz. vials.....oz.	22.60	22.70
Arecoline Hydrobrom, 1 oz vials .....oz.	7.75	8.75
Aspidospermine Amorphous.oz.	...	15.00
Atropine Alk, USP, 1 oz. vials .....oz.	6.50	7.00
Methyl bromide, 1 oz vials.oz.	...	25.00
Sulfate, 5 oz cans.....oz.	...	2.50
Single ounce.....oz.	...	3.00
Barium Iodide, 5 lb box.....lb.	...	5.15
Sulfate, X-ray diagn bbls..lb.	.09½	.10
BAY RUM Porto Rico, 45 gal. bbls.....gal.	.75	.80
Domestic syn. 50 gal bbl..gal.	.70	.75
St. Thomas, 50 gal bbls...gal.	.80	.90
Benzonaphthol, 5 lb boxes...lb.	2.50	2.60
Benzoyl Cholride, 500 lb dr..lb.	1.00	1.05
Benzyl Benzoate, Medicinal FFC.....lb.	1.20	1.40
Chloride Redis, 160 lb cby.lb.	.30	.35
Formate, 1 lb bot.....lb.	3.25	3.50
Succinate, 160 lb cby.....lb.	...	5.25
BISMUTH, metal 100 lb cases .....lb.	...	1.40
Ammon. Citrate, USP, 5 lb cans.....lb.	...	3.25
Betanaphtholate, 5 lb box.lb.	...	2.90
Citrate, USP, 5 lb cans....lb.	...	2.60
Chloride..... .....lb.	...	3.00
Hydroxide .....lb.	...	2.90
Nitrate, 25 lb jars.....lb	...	1.25
Oxide anhydrous.....lb.	...	3.25
Oxychloride, 25 lb boxes...lb.	...	2.95
Salicylate, 25 lb boxes.....lb.	...	1.65
Subcarbonate, USP, 25 lb boxes.....lb.	1.70	1.75
Subcarbonate, X-ray diag 1 lb. bot.....lb.	2.65	2.72
Subgallate, USP, 25 lb boxes .....lb.	1.75	1.80
Subiodide, 5 lb lots.....lb.	...	4.10
Subnitrate, USP, 25 lb jar.lb.	1.50	1.55
Subsalicylate, USP, 25 lb boxes.....lb.	2.55	2.60
Tannate.....lb.	...	2.30
Borax, crys USP, 400 lb bbls.lb.	...	.06
Bromoform, USP, 5 lb bot cases .....lb.	1.65	1.90
Butylchloral Hydrate bot....lb.	4.00	5.00
Cadmium iodide, 10 lb bot...lb.	...	4.55
CAFFEINE Alk, USP, 1..... 100 lb kegs.....lb.	2.45	2.50
Citrated, 50 lb cans.....lb	2.20	2.45
Hydrobromide, 1 lb bot...lb.	4.80	5.00
Hydrochloride, 1 lb bot...lb.	6.05	6.55
Sulfate, 1 lb bot.....lb.	5.40	5.90
Sodium Benzoate, tins....lb.	...	3.05
Salicylate, tins.....lb.	...	2.95
Calcium Bromide, 100 lb cs..lb.	...	.60
Carb, USP, 175 lb bbls....lb.	.05	.06
Glycerophos, 250 lb bbls...lb.	...	1.40
Hypophos, USP, 25 lb cans lb.	.55	.60
Iodide, 5 lb bot.....lb.	...	4.85
Lactate, USP, 500 lb bbls lb.	.45	.50
Lactophosphate Soluble...lb.	...	1.20
Powdered tins.....lb	...	1.00
Insol, powd tins.....lb.	...	.50
Phosphate & Sulfate Tooth Paste grade, Works..lbs.	.03	.06
Sulfide, USP, 100 lb drs...lb.	.21½	.24
CAMPHOR, Jap. ref. slabs 100 lb. cases.....lb.	.54	.55
Refined powd.....lb.	.55	.56
¼ oz tab, 100 lb cases....lb.	.67	.68
Liniment, bbls.....gal.	2.20	2.30
Monobrom, 100 lb cases...lb.	1.85	1.90
Casein edible, 100 lb kegs...lb.	.45	.55
Charcoal Animal medicinal jars incl.....lb.	...	.50
Charcoal Wood, powd, 100 lb. bbls.....lb.	.06	.07
Chloral Hydrate, USP, 25 lb iars.....lb.	.78	.80
100 lb drums.....lb.	.73	.75
Cholesterin.....oz.	5.50	5.85
Chloroform, USP, 50 lb drs...lb.	.25	.27
Chlorophyll, 1 lb. bot.....lb.	2.12	2.30
Chromium Sulfate Scales, tins .....lb.	.45	.50
Powdered tins.....lb.	.50	.55
Chrysarobin, 50 lb tins.....lb.	3.75	4.10
Cinchonine Alk, 100 oz tins.oz.	...	.38
Crystal.....oz.	.43	.46
Sulfate, 100 oz tins.....oz.	...	.25
Cinchonidin Sulfate, 100 oz tins .....oz.	.35	.35
Cincophen, U.S.P. bbls.....lb.	3.25	...
boxes, drms., kegs.....lb.	3.35	3.50
Cocaine Alk, USP, 1 oz vial..oz.	...	11.07
Hydrochloride, USP,.....oz.	...	8.50
CODEINE Alk, 1 oz vials, 10 lots.....oz.	...	10.52
Hydrobromide.....oz.	...	8.92
Hydrochloride.....oz.	...	9.52
Nitrate, oz vl 10 oz lots....oz.	...	9.80
Phosp. oz vl, 10 oz lots....oz.	...	7.92
Salicylate.....oz.	...	8.25
Sulfate, oz vl, 10 oz lots...oz.	...	8.42
Colchicino Alk, USP, 1 oz vl.oz.	...	20.00
Salicylate, 1 oz vls.....oz.	...	35.50
Cream Tartar, USP, 300 lb bbls .....lb.	.24	.24½
Imp. powd. 224 lb bbls....lb.	.24½	.25
Creosote, USP, 42 lb cbys....lb.	.45	.47
Carbonate, 150 lb.....lb.	1.50	1.60
Cresol, USP, 400 lb drums...lb.	...	.20
500 lb drums.....lb.	.14	.17
DIGITALIN Pure, 1 oz vial..oz	15.00	15.50
Dover's Powder, USP, 5 lb tin .....lb.	2.75	2.80
Duboisine Sulfate, 1 oz vl....oz.	35.00	40.00
Emetine Alk, 15 gr vial.....oz.	...	.85
Hydrochloride, USP, 1 oz vl .....oz.	25.00	26.00
15 grain vials.....oz.	2.50	2.70
Epsom Salts, USP, 200 lb bbls .....100 lb.	2.25	2.50
Imp. 100 lb bbls.....100 lb.	2.30	2.35
Ergotin Bonjean, 1 lb jars...lb.	18.50	19.00
Eserine Alk, 1 oz vials.....oz	...	50.00
Salicylate, 1 oz vials.....oz.	...	40.00
Sulfate, USP, VIII 1 oz vials .....oz.	...	40.00
ETHER, USP, 55 lb drums..lb.	...	.12
Anaesthesia, 55 lb drums..lb.	.21	.23
Nitrous, 1 lb bot.....lb.	...	.80
Ethyl Chloride, 200 lb bot...lb.	.22	.24
Ethyl Iodide, 5 lb bot.....lb.	...	6.25
Formaldehyde, USP, 100 lb cbys le-l wks.....lb.	.07	.07½
Gall Extract.....lb.	.20	.21
GLANDULAR SUBSTANCES Duodenal Substance, 1 lb lots	...	5.50
Liver Substance (Hepatic) 1 lb lots.....	...	4.50
Orchic Substance (Testicular)	...	4.75
Ovarian Substance, whole, 1 lb lots.....	...	26.00
Ovarian Residue, 1 lb lots....	...	20.00
Pituitary Substance, whole 1 lb lots.....	...	40.00
Pituitary Substance, Anterior Lobe, 1 lb lots.....	...	27.00
Thyroid, U. S. P., 1 lb lots...	...	4.75
Oxgall Powder, 1 lb lots....	...	1.35
GLYCERIN, CP, 550 lb drums .....lb.	...	12½
Gold Chloride, bottles.....oz.	12.00	12.50
Guaiacol, liq. USP. 100 lb cbys.....lb	1.65	1.75
Crystals.....lb	2.25	2.50
Benzoate, 1 lb bottles.....lb.	...	13.00
Carbonate, 5 lb boxes.....lb.	1.70	2.50
Halazone, 5 lb bot.....lb.	2.75	3.25
Hexamethylenetetramine, USP, 100 lb dr.....lb.	.46	.47
Homatropine Hydrobrom USP, ...oz.	...	14.50
5 oz and 1 oz vials.....oz.	...	13.50
Hydrastine Alk, USP, 1 oz vial .....oz.	20.50	21.00
Hydrochlide, USP, 1 oz vials .....oz.	20.50	21.00
Sulfate, 1 oz vial.....oz.	22.50	23.00
Hydrastinine Hydrochloride, USP, 15 gr vials.....oz.	...	40.00
Hydrogen Peroxide, USP, soln 375 lb bbls.....lb.	.03½	.04½
Hyoscine Hydrobrom, USP, 1 oz vials.....oz.	...	35.00
5 oz, 1 oz vials.....oz.	13.07	13.57
Hyoscyamine Alk, crystals, 1 oz vials.....oz.	...	25.07
Amorphous, 1 oz vial...oz.	...	75.07
Hydrobromide, USP, 1 oz vial .....oz.	...	25.00
Sulfate, 1 oz vial.....oz.	...	25.07



R. W. GREEFF & CO., Inc.

10 East 40th Street New York

What Viscosity Means!

Naturally, you know,

But what does it mean in connection with **Petrolatum Liquidum U. S. P., a Medicinal White Mineral Oil ?**

Medicinal White Mineral Oils were originally produced only from Russian Crude Oil. As usual with oils made of the same crude, the higher the Viscosity, then the higher will be the Specific Gravity. Therefore, formerly it was sufficient to classify and sell Medicinal White Mineral Oils on the basis of the Specific Gravity; and of two such oils, the one with the highest Specific Gravity was the better, provided both oils were equally pure. This method, however, does not hold good when comparing oils of different origin, as then the Specific Gravity figure, as a valuation of the oil as a lubricant for either internal or external purposes, ceases to apply; at least such comparisons are likely to lead to serious mistakes.

ALBINOL, Genuine Russian White Medicinal Oil (Petrolatum Liquidum U. S. P.) refined from Russian Oil has a Saybolt Viscosity of about 325" at 100°F and a Specific Gravity of about .885. White Medicinal Oils of different origin have, for example, a Specific Gravity of .890 and higher, but a Saybolt Viscosity of only 300" or less at 100°F. It therefore results that if a different base crude oil is used for the manufacture of Petrolatum Liquidum U. S. P., it is incorrect to judge the value of an oil by the Specific Gravity. It is the **Viscosity** which determines the value of a lubricant; therefore the basis **must** be the Viscosity, and the oil with the highest Viscosity is the most valuable.

Schliemann Companies, Inc.

53 Park Place, New York, N. Y.

REFINERY IN HAMBURG, GERMANY

Chemicals

Hypoquinone, 100 lb kegs...lb.	...	1.20
ICHTHYOL, tins.....lb.	4.00	4.25
Iodide Arsenous, 5 lb bot...lb.	...	5.20
Arsenous-Mercuric soln, 5 lb bot.....qt	...	.26
Iodine, crude, 200 lb kegs...lb.	4.35	4.35
Resublimed, 10 lb tars....lb.	4.65	4.70
Tincture demis.....gal.	...	4.85
Iodoform, powd 10 lb bot...lb.	...	6.50
Iron & Ammonium Citrate, USP, 50 lb cans.....lb.	.65	.66
Chloride, USP, lump 400 lb bbls.....lb.	.06	.08
Citrate, USP, VIII 25 lb can .....lb.	.94	1.01
Hypophosphite, 5 lb cans..lb.	1.55	1.65
Iodide, 1 lb bottles.....lb.	...	4.28
Phosphate, USP, 50 lb cans .....lb.	...	.69
& Potas Oxalate, 250 lb bbl .....lb.	...	.45
Pyrophosphate, USP, 50 lb .....lb.	.74	.80
& Sod Oxalate, 24 lb box...lb.	...	.30
Sulfate, USP, crys bbls....lb.	.04	.04½
Ferrous dried bbls.....lb.	...	.08
Valerate, tins.....lb.	2.75	3.00
Jalap Resin, USP lumps, 5 lb tins.....lb.	...	4.00
Powdered, tins.....lb.	...	4.65
Lead Acetate, USP, 100 lb kegs .....lb.	.16½	.19½
Iodide, USP, VIII 5 lb bot..lb.	3.20	3.40
Lecithin, 5 oz jars.....oz.	1.00	1.30
Licorice Ext Mass, cases....lb.	.19	.20
Compound powder, bbls...lb.	.11	.13
***LITHIUM CARBONATE**, 250 lb bbls*.....lb.	1.35	1.45
Citrate, USP, 100 lb kegs..lb.	...	1.70
Iodide, 5 lb bottles.....lb.	...	5.65
Lobeline Sulfate, ¼ oz vial...oz.	...	8.75
Magnesium Carbonate, USP, *100 lb bbls*.....lb.	.08	.09
English, oz blocks.....oz.	.16	.18
Glycerophosphate, 5 lb tins .....lb	3.20	3.25
Hypophosphite, 5 lb cans..lb.	1.15	1.20
Salicylate, 100 lb kegs.....lb	...	1.10
Stearate, bbls.....lb.	.23	.25
Manganese Glycerophosphate, 5 lb tins.....lb.	2.90	3.00
Hypophosphite, USP, VIII 5 *lb cans*.....*lb.*	*1.35*	*1.40*
Iodide, 1 lb bottles.....lb.	6.40	6.65
MENTHOL, USP, 60 lb cases .....*lb.*	3.65	3.75
Synthetic, cases.....lb.	3.00	3.10
Mercury Metal, 75 lb flasks...fl.	102.00	103.00
Bichloride, crys 25 lb box..lb.	...	1.51
Gran powd, 100 lb kegs..lb.	...	1.35
Bisulfate, 25 lb boxes.....lb.	...	1.48
Blue Mass, 25 lb boxes....lb.	...	.95
Powd, 25 lb boxes.....lb.	...	.96
Blue Ointment, USP, 50%, 25 lb cans.....lb.	...	1.19
Mild 30%, 25 lb cans....lb.	...	.86
33 1/3% mercury.....lb.	...	.94
Calomel, 50 lb boxes.....lb.	...	1.82
English.....lb.	2.75	2.80
Iodide, green, 25 lb jars...lb.	...	4.80
Red, USP, 25 lb jars...lb.	...	4.89
Yellow, USP, VIII, 25 lb jars.....lb.	4.80	4.80
Red precip, USP, 25 lb boxes .....lb.	...	2.06
Powd., USP, 25 lb boxes.lb.	2.17	2.17
White precip, USP, 25 lb boxes.....lb.	...	2.00
Powd., USP, 25 lb boxes.lb.	...	2.01
Salicylate, 25 lb bot.....lb.	...	2.32
With chalk, USP, 25 lb boxes .....lb.	...	.93
Methanol, Pure 1c-1 drs....gal	...	.44
Methyl Salicylate, USP, 50 lb cans.....lb.	.40	.42
Methylene Blue, USP, med 5 lb cans.....lb	2.00	2.05
Milk powd, 150 lb bbls.....lb.	.09	.12
MORPHINE Alk, 5 oz tin...oz.	10.90	10.95
Acetate, 5 oz tins.....oz.	8.75	8.80
Hydrobromide, 5 oz tins, 10 oz lots.....oz.	8.75	8.80
Hydrochloride, 5 oz tins, 10 oz lots.....oz.	8.75	8.80
Ethyl Hydrochloride, 5 oz tins 10 oz lots.....oz.	...	10.85
Sulfate, 5 oz tins, 10 oz lots .....oz.	7.85	8.00
Naphthalene Flake, 175 lb bbls wks.....lb.	.04½	.05
Balls, 250 lb bbls wks.....lb.	.05½	.06
Oxgall, Purified, 5 lb bot....lb.	1.75	2.50
USP, 5 lb bot.....lb.	2.00	2.50
Oxyquinoline Sulfate, tins...lb.	8.50	9.25
Pancreatin, USP, 100 lb....lb.	...	1.90
Paraffin, refd, 200 lb cs slabs 118 -120 deg MP.....lb.	.08	.09
128-132 deg MP.....lb.	.07½	.07¾
Para-Aldehyde, USP, 100 gal drums.....lb.	.67	.77
Pepsin, USP, 100 lbs. 1:3000.lb.	...	2.25
100 lbs. 1:6000.....lb.	...	4.00
100 lbs. 1:10000.....lb.	...	6.50
Peptone, powd, 5 lb bot.....lb.	...	...
PHENOLPHTHALEIN, USP, 100 lb drums.....lb.	1.00	1.10
5 lb cans 100 lb lots..lb.	1.13	1.20
Pilocarpine Hydrochloride, USP, 1 oz vials 25 oz lots .....oz.	...	3.25
Nitrate, 25 oz lots.....oz.	...	3.25
Single ounce.....oz.	...	3.50
Alkaloid, 15 gr vials.....vl.	...	.75
Piperazine Hydrate, 1 lb bot.lb.	...	15.00
Piperadine, 25 oz bottles.....lb.	...	8.00
Popodhyllin 5 lb bottles.....lb.	4.35	4.50
Potassium Acetate, USP, 100 lb kegs.....lb.	.29	.30
Bicarb, USP, crys 320 lb bbls .....lb.	.09½	.10
Bromide, USP, crys 100 lb cs .....lb.	.34	.35
Citrate, USP, 50 lb bbl....lb.	.42½	.43
Guaiacol Sulfonate.....lb.	1.95	2.25
Potassium Hypophosphite, 10 lb. cans .....lb.	.75	.80
Iodide, USP, 100 lb cases..lb.	3.50	3.55
Lactophosphate, 4 oz bot..lb.	...	.90
Permangan, USP, crys, 100 lb drs wks.....lb.	.15	.15½
Phosphate dibasic pure, kegs .....lb.	...	.49
Salicylate, 25 lb cans.....lb.	...	1.18
Sulfate, USP, VIII, 100 lb kegs.....lb.	.13	.15
Sulfocyanide, CP 15 lb jars lb.	...	.50
Tartrate, CP, tins.....lb.	...	.65
Pyrogallol, USP, see Acid Pyrogallic.....*oz.*	...	...
Quinidine Alk, 100 oz tins...oz.	*.70*	*.75*
Sulfate, 100 oz tins.....oz.	...	.50
QUININE SULFATE, USP, 100 oz tins.....oz.	...	.40
1 oz tins, 100 oz lots....oz.	...	.47
Dutch, 100 oz tins.....oz.	...	.40
Java, 100 oz. tins.....oz.	...	.40
Japanese 100 oz tins.....oz.	...	.40
Acetate.....oz.	...	.74
Arsenate.....oz.	...	.76
Benzoate.....oz.	...	.74
Bisulfate, USP.....oz.	...	.40
Resale.....oz.	...	.39
Citrate.....oz.	...	.51
Dicarbonate, 1 oz tins....oz.	...	2.56
Dihydrobromide.....oz.	...	.54
Dihydrochloride, USP....oz.	...	.54
Ethyl Carbonate, 16 oz tins .....oz.	...	.70
Ferrocyanide.....oz.	...	.74
Formate.....oz.	...	.73
Glycerophosphate.....oz.	...	.72
Hydrobromide, USP.....oz.	...	.50
Hydrochlorosulfate.....oz.	...	.50
Hydrochloride & Urea, USP .....oz.	...	.74
Hypophosphite.....oz.	...	.70
Lactate.....oz.	...	.66
Phenolsulfonate.....oz.	...	.78
Phosphate.....oz.	...	.62
Salicylate, USP.....oz.	...	.52
Tannate, USP.....oz.	...	.41
Tartrate.....oz.	...	.74
Valerate.....oz.	...	.78
& Urea Hydrochloride, USP .....oz.	...	.88
Rennet, N. F. 5 lb 1:25,000...lb.	2.95	3.50
Resorcinol, USP, 25 lb cans..lb.	1.72	1.80
Rochelle Salt, USP, 225 lb bbl .....lb.	.19	.19½
Imp. USP, 300 lb bbls.....lb	...	.23
Rock Sugar, 5 lb boxes.....lb.	...	.15
Saccharin, USP, 10 lb cans...lb.	1.70	1.80
USP, Soluble, 10 lb cans...lb.	1.75	1.85
Salicin, USP.....lb.	...	12.50
SALOL, USP, 100 lb drums..lb.	...	.90
Saltpetre, powd, bbls wks....lb.	.06½	.08¼
Santonin, USP, bulk.....lb.	123.00	133.00
Saponin, refined.....lb.	1.30	1.50
Siedlitz Mixture, 250 lb bb..lb.	...	.17¾
Silver Metal, American.....oz.	...	.42¾
Iodide, 16 oz lots.....oz.	...	.69
Nitrate, 100 oz bottles....oz.	.21½	.23½
Nucleinate, bulk.....oz.	...	.37
Proteinate.....oz.	.39	.41
SODIUM BENZOATE, USP, 100 lb bbls.....lb.	.44	.48
Bromide, USP, 100 lb kegs.lb.	.34	.35
Cacodylate, USP, 25 lb bot .....lb.	4.75	5.90
Citrate, USP, X 50 lb kegs.lb.	.34½	.36
USP VIII, 50 lb kegs....lb.	.29½	.31
Glycerophosphate, USP, crys 25 lb cans.....lb.	1.40	1.55
Powder, 25 lb tins.....lb.	1.45	1.60
Soln, USP, 25 lb tins...lb.	1.05	.120
Hypophosphite, USP, 25 lb cans.....lb.	.65	.70
Iodide, USP, 25 lb jars...lb.	4.25	4.30
Phosphate (Mono-Sodium), 100 lb kegs.....lb.	.30	.31
Di-Sodium USP, granular, 275 lb bbls.....lb.	.07½	.08
Pyrophosphate, 100 lb kegs .....lb.	...	.29
Salicylate, 100 lb kegs....lb.	...	.47
Sulfocarbolate, USP, 100 lb kegs.....lb.	...	.25
Sulfocyanate, CP crys, jars included.....lb.	...	.60
Spartein Sulfate, USP, 25 oz bulk.....oz.	.65	.70
Single oz vial.....oz.	.77	.90
STRONTIUM BROMIDE USP, 50 lb kegs.....lb.	.46	.47
Carb, 100 lb kegs wks....lb.	...	.20
Iodide, USP, 25 lb jars....lb.	...	4.00
Lactate, kegs.....lb.	.90	1.10
Nitrate, 600 lb bbls NY...lb.	.08	.08½
Imp. bbls NY.....lb.	.08	.08½
Salicylate, USP, 100 lb keg lb.	...	1.10
Strophanthin, USP, 1 oz vial.oz.	19.00	19.00
Crystals.....lb.	75.00	75.00
Strychnine Alk, USP crys, 100 oz tins.....oz.	...	.61
Powdered.....oz.	...	.51
Acetate.....oz.	...	.65
Arsenate, 25 oz cans.....oz.	...	.65
Glycerophosphite, USP....oz.	...	.65
Hydrobromide.....oz.	...	.65
Hydrochloride.....oz.	...	.65
Hypophosphite.....oz.	...	.75
Nitrate, USP.....oz.	.55	.72
Phosphate.....oz.	...	.65
Sulfate, USP, powd.....oz.	...	.42
Sugar, refined, 275 lb bbl 100 lb	5.80	5.90
Milk, USP, 200 lb bbls...lb.	.18	.20
Sulfonethylmethane, USP, 10 lb boxes.....lb.	3.85	4.05
Sulonmethane, USP, 10 lb box .....lb.	2.65	3.85
Sulfur flwrs, washed, USP, 125 lb bbl.....lb.	...	.06
Iodide, USP, VIII, 5 lb bot lb.	...	4.55
TARTAR EMETIC, USP, 300 lb bbls.....lb.	.32½	.34½
Terebene, tins.....*lb.*	...	*.85*
Terpin Hydrate, USP, 100 lb kegs.....lb.	.35	.37
Theobromine Alk, 5 lb cans..lb.	1.90	2.25
Sod. Salicylate, 1 lb bot...lb.	...	2.10
Sod. Benzoate, 1 oz vials..oz.	...	1.00
Thymol, USP, 25 lb tins.....lb.	2.00	2.25
Iodide kegs.....lb.	6.00	7.00
Veratrine Alkaloid.....oz.	...	2.25
Sulfate, 1 oz vials.....oz.	...	2.25
Witch Hazel Ext., 50 gal bbl .....gal.	.60	.80
Zinc Carb, USP, 100 lb keg..lb.	.28	.31
Chloride, USP, 25 jars ex..lb.	.24	.29
Iodide, 5 lb bottles.....lb.	...	5.22
Oxide, USP, 100 lb bbls...lb.	.13	.14
Stearate, USP, 50 lb bbl..lb.	.18	.20
Sulfate, USP, 100 lb bbl..lb.	.08	.09
Sulfocarbolate, 100 lb kegs..lb.	.23	.26

Miscellaneous

Castor Oil, odorless, bbls.....lb.	...	.13½
Chalk drop, 175 lb. bbls.....lb.	...	.03½
Precip. light, 250 lb. cask..lb.	...	.04½
Heavy 540 lb. casks.....lb.	...	.02½
Bulk.....ton	...	5.00
English light, bags.....lb.	...	.04½
English light, casks.....lb.	.05½	...
Cocoa Butter, 12 lb. box....lb.	.42	.45
Cod Liver Oil Nor. 30 gal. bbls	30.00	31.00
Newfoundland.....bbl.	...	31.00
Collodion U. S. P. 30 lb. dr...lb.	...	.23
Corn Syrup 42° 50 gal. bbl. .....100 lb.	3.91	4.16
Gelatin, USP, Silver 100 lb. cases.....lb.	.55	.60
Pure Food, 50 lb. bbl.....lb.	.53	.55
Glucose, (grape sugar) dry 70° bags c-l NY.....100 lb.	3.14	3.24
Haarlem Oil, bot 6 gross cases .....gross	...	3.75
Imported, 5 gr. cs.....gross	...	3.50
Kaolin, Bags.....lb.	.06	.08
Colloidal Grade 200 lb. tin lined wooden drums....lb.	.15	.29
Mineral Oil White, 50 gal. bbls. 80-85 vis.....gal.	.50	.55
85-90 vis.....gal.	.65	.70
125-130 vis.....gal.	.75	.85
290 vis.....gal.	.90	1.10
Russian 110-115 vis.....gal.	.69	.79
145-155 vis.....gal.	.70	.75
320-330 vis.....gal.	.80	.90
Olive Oil, Edible bbls.....gal.	2.00	2.40
Paraffin Wax, fully refined, slabs 125 @ 127 A.M.P. bags lb.	...	.03
130 @ 132 A.M.P. bags lb.	...	.04¼
135 @ 137 A.M.P bags lb.	...	.05
Petrolatum, Lily White, USP. 400 lb. bbl .....lb.	.08	.08½
Snow White USP, 400 lb. bbls.....lb.	.09	.11
Rice Starch, 140 lb bags....lb.	.09	.10
Soap Castile, bars 40 lb. Case .....Cs.	...	12.75
Powd. USP 250 lb. bbls...lb.	.26	.28
Green, USP, 450 lb. bbls...lb.	.07½	.07½
Neutral, powd. bbls.....lb.	.17	.18
Talc, Italian, 220 lb bags...ton.	60.00	80.00
French, 220 lb bags.....ton.	40.00	45.00

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LIMITS OF ANALYSIS:

Sp. Gr. @ 15.5°	0.968 to 0.975
Opt. Rotation $_{AD}$	-4° to -16°
Alcohol as Santalol	90% to 95%
Solubility in 70% Al.	1 in 3 to 1 in 6 Vols.

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Aromatics and Essential Oils

Acetophenene, CP, 1 lb bot..lb.	3.50	3.65
Aldehyde, C 8 (Otcyl) 1 lb bot ..lb.	...	50.00
C 7, 1 lb bot.....lb.	4.50	5.50
C 9 (Nonyl), 1 lb bot ...lb.	...	40.00
C 10 (Decyl), 1 lb bot....lb.	.	48.00
C 14, 1 lb bot.....lb.	.	32.00
C 16, 1 lb bot.....lb.	...	24.00
AMYL ACETATE, pure, 25 lb cans.....lb.	.43	.50
Butyrate, 1 lb bot.....lb.	1.25	1.50
Butyrate, 5 lb bot.....lb.	...	1.00
Cinnamate, 5 lb bot.....lb.	9.50	9.75
Formate, 1 lb bot.....lb.	...	1.90
Formate, 5 lb bot.....lb.	...	1 75
Phenyl Acetate, 1 lb bot...lb.	4.50	5.00
Salicylate, 100 lb cbys.....lb.	1.25	1.30
Imported.....lb.	2.25	2.50
Anethol, 2 lb bot.....lb.	1.90	2.15
Anisic Aldehyde, 1 lb bot...lb.	4.00	4.50
Benzaldehyde, USP, 40 lb cbys ..lb.	...	...
50 lb cbys.....lb.	1.45	1.55
FFC, 40 lb cbys.....lb.	1.35	1.45
Benzoic Ether, see Ethyl Benzoate.....		
Benzophenone, 1 lb bot.....lb.	4.50	5.00
Benzyl Acetate, 100 lb cbys..lb.	.90	1.10
Alcohol, 5 lb bot.....lb.	1.20	1.30
BENZYL BENZOATE.....lb.	1.15	1.20
Medicinal, FFC.....lb.	...	1.40
Buytrate, CP, 1 lb bot....lb.	9.25	9.50
Benzyl Cinnamate, 1¼ bot. lb.	7.00	7.25
Formate, 1 lb bot.....lb.	3.25	3.35
Propionate, 1 lb bot.....lb.	3.60	3.75
Succinate, 1 lb bot.....lb.	5.25	5.50
Valerate, 5 lb bot.....lb.	3.00	3.25
Borneol, 1 lb bot.....lb.	2.50	3.00
Bornyl Acetate, 1 lb bot....lb.	2.25	3.35
Bromstyrol, 25 lb cases.....lb.	4.50	4.65
Butyl Anthranilate dom, 1 lb bot.....lb.		
Carvol, 5 lb bot.....lb.	3.60	4.00
Cinnamic Acid, 5 lb cans....lb.	3.25	3.50
Alcohol liquid, 1 lb bot...lb.	3.00	3.10
Crystallizable.....lb.	7.00	8.00
Aldehyde.....lb.	2.25	2.50
Imported, 1 lb bot.....lb.	7.75	9.00
Citral, 25 lb cans.....lb.	2.65	4.00
Citronellal 1 lb bot.....lb.	2.00	4.00
Citronelyl Acetate, 1 lb bot..lb.	6.00	6.25
Coumarin, 25 lb cans.....lb.	3.50	4.00
DECYL ALCOHOL.....lb.	25.00	28.00
Diethyl Phthlate see Chemicals		
Diphenyloxide, 25 lb tins....lb.	1.00	1.15
Diphenyl Methane.....lb.	1.75	2.00
Duodecyl Alcohol.....lb.	20.00	22.00
Ethyl Acetate, pure, 5 lb bot..lb.	.06	.07
Benzoate, 5 lb bot.....lb.	1.50	1.75
Ethyl Butyrate, 5 lb bot....lb.	1.80	2.00
Caproate, 1 lb bot.....lb.	3.25	3.50
Cinnamate, 1 lb bot.....lb.	4.00	4.50
Formate, 5 lb bot.....lb.	1.00	1.25
Methyl Paracresol, 1 lb bot ..lb.	3.25	3.50
Phenyl Acetate, 5 lb bot..lb.	3.75	4.00
Valerate, 5 lb bot.....lb.	...	3.75
Salicylate, 5 lb bot.....lb.	1.95	2.00
Eucalyptol, USP, 50 lb cans..lb.	.80	.85
Eugenol, USP, 25 lb cans....lb.	3.50	4.00
Geraniol, 50 lb cases.....lb.	2.50	3.10
Geranyl Acetate, 1 lb bot....lb.	3.00	3.05
Butyrate, 1 lb bot.....lb.	13.00	13.50
Formate, 1 lb bot.....lb.	12.00	12.50
Glyco Ester.....lb.	1.00	1.10
Heliotropin, 100-10 lbs.....lb.	1.65	1.75
Imported.....lb.	1.95	2.05
Hydroxycitronellal, 1 lb.....lb.	5.50	7.50
Indol, CP, 1 oz bot.....oz.	2.90	3.00
IONONE, 1 lb bot 100%...lb.	5.00	6.00
Alpha.....lb.	4.80	5.00
Beta.....lb.	5.70	5.75
Methyl.....lb.	5.75	6.00
Iso Borneol.....lb.	2.25	2.35
Iso Bornyl Acetate.....lb.	3.00	3.20
Iso-Butyl Benzoate, 5 lb bot..lb.	2.75	3.00
Iso-Eugenol, 1 lb bot.....lb.	3.75	3.80
Iso-Safrol, 1 lb bot imp.....lb.	1.75	1.85
Domestic, 5 lb bot.....lb.	3.50	3.75
Linalol from Bois de Rose, 5 lb bot.....lb.	3.00	5.00
Lynalyl Acetate, 1 lb bot....lb.	3.50	4.50
Benzoate, 1 lb bot.....lb.	13.00	14.00
Formate, 5 lb bot.....lb.	10.50	12.00
METHYL ACETOPHENONE .....lb.	3.35	3.50
Anthranilate, 1 lb bot.....lb.	2.45	2.50
Imported.....lb.	2.70	2.75
Anthranilic Acid.....lb.	11.75	12.00
Benzoate, 5 lb bot imp....lb.	1.75	1.85
Domestic, 5 lb bot.....lb.	1.75	2.00
Cinnamate, 1 lb bot.....lb.	3.75	4.25
Heptenone, 1 lb bot.....lb	6.50	7.00
Paracresol, 1 lb bot.....lb	4.50	8.00
Phenylacetate, 5 lb bot...lb	3.75	4.00
Salicylate, USP, 500 lb dr .lb.	...	.40
50 lb cases.....lb.	...	.42
Mirbane rect, 1,000 lb drs...lb.	.12	.13
Musk Ambrette 1 lb cans...lb	7.25	7.50
Ketone 1 lb cans.....lb	8.00	8.15
Xylene 5 lb cans.....lb.	2.25	2.35
Nerolin 1 lb cans.....lb.	1.35	1.40
Octyl Alcohol 1 lb bot.....lb.	30.00	32.00
Oenanthic Ether lb bot....lb.	1.90	2.00
Oleoresin Aspidum.....		
USP, bot and tins.....lb.	...	1.25
Capsicum, USP, bot and tins .....lb.	3.50	4.25
Cubeb, USP, bot and tins..lb.	3.00	3.25
Ginger bot and tins.....lb.	2.85	3.35
Malefern see Aspidum.....		
Orris, bot & tins.....lb.	15.00	18.00
Pepper, black, USP, bot & tin .....lb.	...	9.50
Vanilla, bot & tins.....lb.	8.00	8.75
Paracresol Methyl Ether....lb.	6.50	6.75
Paracresyl Acetate.....lb.	5.50	5.75
Para Cymene Refd 110 gal dr .....gal.	2.25	2.50
PHENYLACETALDEHYDE 50% 1 lb bot.....lb.	4.75	5.00
Imported 50%.....lb.	4.75	5.00
100%.....lb.	8.00	8.25
Phenylacetic Acid 1 lb bot...lb.	3.50	3.75
Phenyl Diacetate 1 oz bot...oz.	3.00	3.25
1 lb bot.....lb.	8.00	10.00
Imported.....lb.	7.00	7.75
Phenylethyl Alcohol 1 lb bot.lb.	4.50	4.75
Phenyl Ethyl Acetate.....lb.	8.25	8.75
Butyrate 1 lb bot.....lb.	15.00	16.00
Formate, 1 lb bot.....lb.	19.00	21.00
Propionate, 1 lb bot.....lb.	16.00	18.00
Valerate, 1 lb bot.....lb.	19.00	20.00
Phenylpropylalcohol, 1 lb bot .....lb.	12.00	12.50
Rhodinol, 1 lb bot.....lb.	6.25	20.00
Saffrol, drums.....lb.	.30	.32
60 lb cans .....lb.	.32	.34
Skatol, 1 oz bot.....lb.	4.50	7.00
Terpinyl Acetate, 25 lb cans..lb.	.90	.95
Imported, 25 lb cans.....	.85	.90
TERPINEOL, CP, 1000 lb drs .....lb.	.27	.29
50 lb cans.....lb.	.31	.33
Absolute, 25 lb cans.....lb.	.48	.50
Imported, 25 lb cans...lb.	.58	.60
Valerianic Ether see Ethyl Valerate.....		
Vanillin (Clove Oil), USP.lb.	5.50	5.75
(Guaiacol) USP.....lb.	5.00	5.25

Essential Oils

Almond Bitter, USP, 5 lb bot lb.	2.65	2.75
Bitter, ffPA, 5 lb bot.....lb.	2.75	2.85
Sweet, 56 lb cans.....lb.	.45	.48
Almond Meal, 25 lb cans....lb.	.20	.21
Amber crude, 25 lb tins.....lb.	.15	.17
Rectified, 25 lb tins.....lb.	.50	.53
Amber liquid, 400 lb drs.....lb.	2.20	2.30
Ambergris, Black, boxes.....oz.	14.00	15.00
Gray boxes.....oz.	32.00	36.00
Angelica Root, 1 lb bot.....lb.	25.00	35.00
Anise Tech, 400 lb drums...lb.	.46	.48
USP, 60 lb cans.....lb.	.48	.50
Apricot Kernel, 50 lb cans...lb.	.26	.27
Bay, 25 lb tins N. F. V., 50.55% Phenol.....lb.	2.05	2.25
Terpeneless.....lb.	4.25	4.45
BERGAMOT, 25 lb coppers.lb.	1.65	2.20
Terpeneless.....lb.	6.25	9.25
Artificial, 25 lb cans.....lb.	1.50	1.75
Birch, Sweet, Northern, 25 lb tins.....lb.	2.25	2.75
Southern, 25 lb tins.....lb.	...	1.95
Birch Tar, rect., 5 lb bot.....lb.	.50	.55
Crude, 50 lb tins.....lb.	.12	.13
Bois de Rose, tins.....		
Brazillian.....lb.	.65	.70
Cayenne, tins.....lb.	1.35	1.55
Cade, 25 lb cans.....lb.	.25	.27
Cajuput, native, 50 lb tins..lb.	.57	.62
Calamus, 5 lb bot.....lb.	2.75	3.00
Camphor Sassa, 1000 lb drs..lb.	.21	.22
White, 400 lb drs.....lb.	.17	.18
Cans, 50 lbs.....lb.	.19	.20
CANANGA, Native 25 lb tins .....lb.	1.75	1.90
Rectified, 25 lb tins.....lb.	2.10	2.20
Caraway, USP.....lb.	1.50	1.65
Cardamon, NF, 1 lb bot.....lb.	20.00	25.00
Cascarilla, USP, 1 lb bot.....lb.	65.00	80.00
Cassia, ...	...	...
Redist, USP, 50 lb cans...lb.	.95	1.00
Cedar Leaf, 50 lb tins.....lb.	.95	1.00
Cedar Wood, light, 1000 lb drs .....lb.	.37	.39
Celery, 1 lb bot.....lb.	...	7.50
Chaulmoogra, USP 80 lb cases lb.	...	1.50
Cinnamon Ceylon, 1 lb bot...lb.	9.00	10.00
Leaf, 5 lb bot.....lb.	1.85	1.95
CITRONELLA Ceylon, 1000 lb drs.....lb.	.42	.44
50 lb tins.....lb.	.44	.46
Java, 400 lb drs.....lb.	.53	.55
50 lb tins.....lb.	.57	.59
Civet, Abyssin, horns.....oz.	2.10	3.00
Cloves, USP, 50 lb cans.....lb.	1.60	1.65
6 lb bot.....lb.	2.20	2.25
Copaiba.....lb.	...	.50
Coriander, USP, 10 lb bots..lb.	4.75	5.25
Croton USP, 25 lb tins.....lb.	4.50	5.00
Cubebs, USP, 5 lb bot.....lb.	2.70	2.80
Cumin, 1 lb bot.....lb.	7.00	7.50
Dill, 25 lb cans.....lb.	3.75	5.25
Erigeron, 20 lb tins.....lb.	1.25	1.35
EUCALYPTUS Austl, USP, 56 lb cans, cases.....lb.	.40	.41
500 lb drs.....lb.	.37	.38
Fennel, USP, 25 lb tins.....lb.	.95	1.10
Geranium African, 25 lb tins..lb.	4.25	5.25
Bourbon, 28 lb tins.....lb.	4.00	5.00
Turkish, 28 lb tins.....lb.	2.25	2.50
Ginger, 1 lb bot.....lb.	4.35	4.50
Gingergrass, 28 lb tins.....lb.	2.50	2.70
Grape Fruit.....lb.	2.90	3.00
Hemlock, 25 lb tins.....lb.	1.00	1.05
Juniper Berries, USP, 25 lb tins .....lb.	1.80	1.85
Wood, 50 lb tins.....lb.	.50	.60
Labdanum, 5 lb bot.....lb.	5.50	6.00
LAVENDER, USP, 28 lb tins .....lb	2.10	2.25
Spike Spanish, 50 lb cans..lb.	.50	.60
Lemon Ital, 25 lb cans.....lb.	.70	1.05
California 35 lb cbys....lb.	.65	.90
Lemongrass, native, 50 lb cans .....lb.	.65	.67
Limes, expressed, 25 lb tins..lb.	14.00	17.00
Distilled, 25 lb tins.....lb.	10.50	11.00
Linaloe Mex., 70 lb cases....lb.	...	1.75
Mace, distilled, 50 lb tins....lb	1.25	1.30
Mandarin, 25 lb cases.....lb.	4.35	4.85
Musk Pods Cabardine, tins..lb.	...	...
Musk Tonquin, tins, Pods...oz.	24.00	26.00
Grains Cabardine, tins....oz.	...	...
Tonquin, tins, Grained..oz.	28.00	34.00
MUSTARD, USP, 1 lb bots.lb.	9.50	10.00
Artif, USP, 5 lb bot.....lb.	1.60	1.70
Neroli Bigarade, ¼ & ½ & 1 lb bot .....lb.	125.00	250.00
Petale, 1 lb bot.....lb.	160.00	170.00
Artificial, 1 lb bot.....lb.	5.00	15.00
Nutmeg, USP, 50 lb tins....lb	1.15	1.20
ORANGE BITTER, 25 lb tins .....lb	2.35	2.60
Sweet W Ind, 25 lb tins..lb	2.00	2.25
Italian, 25 lb cop.....lb	2.05	2.45
Orange American, Cold pressed 25 lb tins .....lb.	1.90	2.00
Distilled, 25 lb tins.....lb.	1.00	1.05
Spanish, 25 lb tins.....lb.	...	2.25
Oil Orris, concrete.....oz.	5.75	6.00
Origanum, 50 lb cans tech...lb.	.25	.27
Parsley, 1 lb bot.....lb.	7.50	7.75
Patchouli, 5 lb bot.....lb.	4.65	5.00
Pennyroyal, dom, 25 lb tins..lb.	1.90	2.10
Imported, 25 lb tins.....lb.	...	1.05
Pepper Black lb,.....	...	8.00
Peppermint, nat. 60 lb cases lb.	1.70	1.80
Redis, USP, 60 lb cs.....lb.	1.85	2.00
Petit Grain S A., 25 lb tins..lb.	1.25	1.35
French, 1 lb bot.....lb.	4.50	4.75
Italian, 25 lb tins.....lb.	2.20	2.30
Pimento, 25 lb tins.....lb.	1.60	1.75
Pineedle Siberian, cans.....lb.	.60	.65
Pinus, Sylvestris, 25 lb tins..lb.	1.30	2.00
Pumilio, USP, 25 lb tins...lb.	1.90	1.95
Rose Fr, 8, 16, & 32 oz pkgs..lb.	14.00	17.00
Bulg, 8, 10 & 32 oz pkgs...lb.	14.00	16.00
Rosemary, USP, 27½ lb tins..lb.	...	.49
1000 lb drums.....lb.	...	.48
Tech, 25½ lb tins.....lb.	...	.40
Rue, 1 lb bot.....lb.	3.00	3.10
SANDALWOOD, E Ind ,USP, 100 lb case.....lb.	8.25	8.50
W Indian (Amayris), 25 lb tins.....lb.	2.85	2.95
Australian, Tins.....	5.65	5.65
Sassafras, USP, 50 lb cans...lb.	1.30	1.32
Artificial, 1000 lb drs, 60 lb cans.....lb.	.27	.29
Safrol, cans.....lb.	.36	.38
Savin, 50 lb tins.....lb.	2.50	2.75
Snakeroot, Canada.....lb.	9.00	9.25
SPEARMINT, USP, 50 lb tins .....lb	1.90	2.15
Spruce, 50 lb tins.....lb	.95	1.00
Tansy, American, 25 lb tins..lb.	2.60	2.75
Tar, 50 gal bbls.....lb.	.25	.30
USP, 50 gal bbls.....lb.	.75	1.50
Thyme, red, NF, 25 lb tins..lb.	.65	.68
White, NF, 25 lb tins.....lb.	.83	.85
Tech, 110 lb drums.....lb.	.60	.70
Turpentine, USP, rect cbys..lb.	.27	.30
Vetivert Bourbon, 10 bot....lb.	4.75	5.00
Indian, 1 lb bot.....lb.	25.00	38.00
Java, 1 lb bot.....lb.	13.50	14.50
Wine, heavy, 1 lb bot.....lb.	1.65	1.75
WINTERGREEN Gaultheria, true, 25 lb tin.....lb.	8.00	10.00
Southern, 25 lb tins....lb.	3.75	4.00
Synthetic see Methyl salicylate.....		
Wormwood, dom, 25 lb tins..lb.	7.50	7.75
Wormseed, Balt, 25 lb tins...lb.	2.80	3.00
Ylang Ylang Bourbon, 10 lb tins No. 1.....lb.	5.25	5.50
10 lb tins No. 2.....lb.	5.20	5.25
Manila, 1 lb bot.....lb.	30.00	36.00

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Drugs and Spices

Aconite Root, USP, bags	lb.	.14	.15
Agar Agar, No. 1, bales	lb.	1.0	1.10
Agar Agar No. 2, bales	lb.	.95	1.00
Almonds Meal	lb.	.40	.41
Aletris Root, bags	lb.	.26	.27
Alkanet Root, bags	lb	.10	.11
ALOES, Cape, 400 lb cases	lb.	.11	.12
Curacao, 100 lb cases	lb.	.25	.27
Socotrine, Whole, 300 lb cs	lb.	.32	.37
Althea Root, bags	lb.	.20	.22
Cut cases	lb.	.21	.28
Angelica Root, bags	lb.	.17	.18
Angostura Bark, bags	lb.	.19	.20
Anise Star case	lb.	.10	.10½
Spanish, bags	lb	.08½	.08¾
ARABIC GUM, White, No. 1, 220 lb bags	lb.	.33	.35
Seconds, 220 lb bags	lb.	.29	.31
Sorts, Amber, 220 lb bags	lb.	.09½	.10
Powd, USP, 300 lb bbls	lb.	.17	.20
Areca Nuts, 100 lb bbls	lb.	.07½	.09½
Powd, 100 lb bbls	lb.	.11½	.12½
Arnica Flowers, bales	lb.	.12	.14
Root, bags	lb.	.42	.43
Arrowroot, St. Vincent, powd bbls	lb.	.08	.09
Asafoetida, 250 lb cases	lb.	.20	.21
Powd, 50 lb boxes	lb.	.35	.36
Balm Gilead Buds, bags	lb.	.30	.35
Balmony Herbs, bales	lb.	.22	.24
BALSAM COPAIBA Para, 80 lb cases	lb.	...	.23
South American, USP, 80 lb cases	lb.	...	.24
Peru, 120 lb cases	lb.	1.50	1.85
Tolu, 90 lb cases	lb.	.95	1.00
Barberry Bark, of root, bags	lb.	.19	.21
Bayberry Bark, bales	lb.	.09	.10
Wax bbls	lb.	.29	.32
BELLADONNA LEAVES, bale	lb.	.13	.15
Root, bags	lb.	.12½	.13½
Bees Wax, White, cases	lb.	.48	.52
Yellow refined cases	lb.	.34	.40
Benzoin Gum, Siam, boxes	lb.	1.20	1.30
Sumatra, cases	lb.	.32	.33
Berberis Aquafolium Root, bags	lb.	.09	.10
Beth Root, bags	lb.	.10	.11
Black Indian Hemp Root, 100 lb bags	lb.	.12	.13
Blood Root, bags	lb.	.13	.13½
Blueflag Root, bags	lb.	.16	.17
Boldo Leaves, bales	lb.	.15	.17
Boneset Herb, bales	lb.	.10	.11
Borage Flowers, bales	lb.	.15	.16
Broomtop Herb Cut, bales	lb.	.08	.09
Bryonia Root, bags	lb.	.10	.11
BUCHU LEAVES Short, 250 lb. bales	lb.	.21	.23
Long bales	lb.	.75	.80
Buckbean Leaves, bales	lb.	.08	.09
Buckthorn Bark, bags	lb.	.04½	.05
Berries, bags	lb.	.30	.35
Burdock Root, bags	lb.	.09	.10
Seed bags	lb.	.35	...
Burgundy Pitch, 110 stand gross for net	lb.	.08	.09
Imported	lb.	.10	.11
Calabar Beans, bags	lb.	.20	.21
Calamus Root, blchd cases	lb.	.37	.38
Unbleached, bags	lb.	.07	.08½
Calendula Petals, imp bales	lb.	.35	.40
Calisaya Bark, bales	lb.	.19	.20
Powdered, bbls	lb.	.25	.26
Canary Seed, South America, bags	lb.	.06	.06½
Dutch, bags	lb.	.05½	.06
Candelilla Wax, bags	lb.	.27	.28
Cannella Alba Bark, bales	lb.	.26	.27
Cannabis, U.S.P.	lb	.19	.26
Cantharides, Chinese, cases	lb.	.40	.45
Powdered, boxes	lb.	.65	.68
Russian, cases	lb.	.70	.75
Powdered, boxes	lb.	.75	.77
Caraway Seed, African, bags	lb.	.05	.06
Dutch, 11 lb bags	lb.	.09	.09½
Cardamon bleached, cases	lb.	1.25	1.33
Decorticated, cases	lb.	.60	.62
Cascara Amarga, 150 lb bbls	lb.	Nom	...
So called bales	lb.	.50	.75
CASCARA SAGRADA, 1928 bark	lb.	.17	.18
1929 bark	lb.	.16½	.18
1930 bark	lb.	.13	.14
Cascarilla Bark, quills, bales	lb.	.90	1.00
Siftings, bbls	lb.	.65	...
Cassia Batavia No. 1 bbls	lb.	.08½	.09
Shortstick, bales	lb.	.07½	.07½
Batavia No. 3, bales	lb.	.06½	.07
China Select Rolls, cases	lb.	.03¾	.04
Broken, bales	lb.	.05½	.05¾
Saigon, thin	lb.	.22	.23
Buds, cases	lb.	.12	.13
Fistula, baskets	lb.	.08	.09
Catnip, Herb, bales	lb.	.20	.21
Celery Seed, bales	lb.	.17	.17½
Ceresin Wax, White, bags	lb.	.15	.20
Yellow 200 lb. bags	lb.	.11	.14
Imp. 100 lb. bags	lb.	.25	.38
CHAMOMILE FLOWERS Roman, bales	lb.	.42	.47
Hungarian, cases	lb.	.25	.26
Charcoal Willow, powd, bbls	lb.	.06	.06½
Wood, powd, bbls	lb.	.04	.05
Chestnut Bark	lb.	.07	.08
Leaves bales	lb.	.05	.05½
Chicle Gum, lb bbls	lb.	.58	.75
Chiretta, bales	lb.	.16	.19
Cinnamon, Ceylon, No. 1, bales	lb.	.17	.18
No. 2 bales	lb.	.13½	.14
No. 3 bales	lb.	.13	.14
Clover Tops, Red, bags	lb.	.08	.09
Cloves Zanzibar, 135 lb bbl	lb.	.25	.26
Cochineal, Black	lb.	.69	...
Silver	lb.	.85	...
Cohosh Root, Black, bags	lb.	.06½	.07½
Blue, bags	lb.	.07	.08
Colchicum Root, bags	lb.	.08	.09
Seed, bags	lb.	.75	.80
COLOMBO ROOT, bags	lb.	.07	.08
Colocynth Pulp, bales	lb.	.19	.20
Coltsfoot Leaves, bags	lb.	.07	.08
Comfrey Root, bags	lb.	.12	.13
Condurango Bark, bags	lb.	.10	.11
Coriander Seed, Morocco, bags	lb.	.02¾	.03
Bleached, bags	lb.	.05½	.06
Corn Silk, bales	lb.	.06	.07
Cotton Root Bark, bales	lb.	.09	.10
Cowhage, 1 oz tins	lb.	1.00	...
Cramp Bark so called bales	lb.	.05½	.06
True, bags	lb.	.32	.37
Cranesbill Root, bags	lb.	.10	...
CUBEB BERRIES, XX bags	lb.	.32	.33
Powdered, boxes	lb	.34	.35
Culvers Root, bags	lb.	.15	.16
Cumin Seed, Malta, bags	lb.	.13½	.13¾
Morocco, bags	lb.	.12¾	.12¾
Cuttlefish, Bone Trieste, Straps	lb.	.22	.24
French, boxes	lb.	.22	.23
Powdered, bbls	lb.	.09	.10
Broken, bales	lb.	.07	...
Damiana Leaves, bales	lb.	.15	.16
Dandelion Root, Imp. bags	lb.	.14	.16
Deer Tongue Leaves, bales	lb.	.11	.13
Digitalis Leaves, bales	lb.	.12	.13
Dogwood Bark, Jamaica bags	lb.	.08½	.09½
American bales	lb.	.06½	...
Doggrass Root, USP, cut bags	lb.	.19	.20
Dragons Blood Mass, cases	lb.	.65	.70
Reeds, boxes	lb.	...	1.15
Echinacea Root, bags	lb.	.18	.19
Elcampane Root, bags	lb.	.07	.08
Elder Flowers, bags	lb.	.26	.30
Elemi Gum, 85 lb cases	lb.	.26	.28
Elm Bark, bundles	lb.	.20	.21
Grinding bags	lb.	.13½	.14
Powdered, bbls	lb.	.17	.18
Ephedra Vulgaris, bales	lb.	.07	.08
ERGOT, 150-200 lb bags	lb.	.47	.65
Eucalyptus Leaves, bales	lb.	.05½	.06½
Euphorbia Pilulifera, Herb, bags	lb	.05½	.08½
Euphorbium Gum, cases	lb.	.14	.20
Fennel Seed, French, bags	lb.	.08½	.08¾
German bags	lb.	.08½	.10½
Foenugreek Seed, 200 lb bags	lb.	.04½	.04¾
Fish Berries, 100-125 lb bag	lb.	.06	.07½
Flax Seed, Whole 182 lb bbls		14.50	15.25
Ground, 180 lb bbls	lb.	.06	.06½
Fringe Tree Bark or Root bags	lb.	.16	.18
Fumigating Pastiles, boxes	lb.	.30	.35
Galangal Root, bags	lb.	.08	.09
Galbanum Gum, cans	lb.	.90	1.00
Gamboge Gum, 100 lb cases	lb.	.85	.90
Powdered, cases	lb.	...	1.05
Gelsemium Root, bags	lb.	.06½	.07½
GENTIAN ROOT, bags	lb.	.07½	.08½
Ground bbls, boxes	lb.	.10	.11
Powdered, bbls, boxes	lb.	.10	.11
Ginger, African, bags	lb.	.05½	.06
Jamaica Grinding bags	lb.	.09½	.10
Cochin ABC & Lemon, bags	lb.	.12	.12½
Ginseng Root, cultivated cs	lb.	8.00	10.00
Wild Southern, cases	lb.	...	16.00
Golden Seal Root, bags	lb.	1.10	1.15
Powdered, boxes	lb.	1.50	1.55
Herb, barrels	lb.	1.25	1.30
Grains of Paradise, bags	lb.	.12	.17
Grindelia Robusta, Herb, bale	lb.	.07	.08
Guaiac Gum, 150 lb cases	lb.	.32	.33
Strained 75 lb cases	lb.	.70	.75
Guarana, tin cases	lb.	1.00	1.25
Hellebore Root, Black, bbls	lb.	.05½	.06
White, 250 lb bbls	lb.	.07¾	.08½
Powdered	lb.	.11	.12
Helonias Root, bags	lb.	.46	.48
Hemp Seed, bags	lb.	.03½	.03¾
Henbane Leaves, USP, bales	lb.	.10	.11
HENNA LEAVES, bales	lb.	.10	.11
Powdered	lb.	.14	.15
Hops, bales	lb.	...	.23
Horehound, Herb, bales	lb.	.07	.08
Hydrangea Root, bales	lb.	...	.07½
IPECAC ROOT, Carteagna, bags	lb.	1.35	1.40
Powdered, 220 lb bbls	lb.	1.45	1.50
Rio Whole, bags	lb.	2.30	2.35
Powdered, 110 lb bbls	lb.	2.50	2.55
Isinglass, American, 130 lb cases	lb.	.95	1.00
Russian (Beluga), boxes	lb.	4.50	...
Jaborandi Leaves, bales	lb.	.09½	.10
Jalap Root, Whole, 150 lb bag	lb.	.20	.22
USP, Powd, 250 lb bbls	lb.	.25	.28
Japan Wax 24 lb cases	lb.	.18½	.19
JUNIPER BERRIES, 125 lb bags	lb.	.05	.05½
Kamala, boxes	lb.	.70	.75
Karaya Gum, Powdered, bbls	lb.	.12	.20
Kava Kava Root, bags	lb.	.13	.14
Kino Gum, Black, cases	lb.	.50	.55
Kola Nuts, 150 lb bags	lb.	.08	.09
Lady Slipper Root, bags	lb.	.50	.55
Larkspur Seed, bags	lb.	.35	.40
Laurel Berries, bags	lb.	.08	.09
Leaves, Greek, bags	lb.	.05½	.06½
Italian, bales	lb.	.08	.09
Lavender Flowers, Ordinary	lb.	.18	.20
Selected	lb.	.32	.33
Lemon Peel, bags	lb.	.09	.10
LICORICE ROOT, Whole bbls	lb.	.12½	.18½
Spanish Natural bales	lb.	.05½	.07
Powdered, bbls	lb.	.08	.10
Selected 2 & 5 lb bdls	lb.	.12	.15
Cutting, 125 lb bags	ln.	.06	.06½
Turkish, 150 lb bales	lb.	.05	...
Linden Flowers with leaves, bales	lb.	.15	.16
Without leaves, bales	lb.	.21	.22
Liverwort Leaves, bales	lb.	.15	.16
Lobelia, Herb, bales	lb.	.08½	.09½
Seed, bags	lb.	.45	.50
Lovage Root, Imp., bags	lb.	.25	.27
Lupulin N. F., tins	lb.	1.40	1.45
Lycopodium, 88 lb. cases	lb.	.37	.39
MACE SIAUW, No. 1, cases	lb.	.45	.46
Banda No. 1, cases	lb.	.53	.54
Batavia No. 2, cases	lb.	.34	.35
Malva Flowers, Blue, bales	lb.	.37	.39
Black, bales	lb.	.28	.43
Leaves, bales	lb.	.13	.14
Manaca Root, bales	lb.	.27	.28
Manna, Large Flake, cases	lb.	.65	.67
Small Flake, cakes	lb.	.40	.48
Sorts, cases	lb.	.45	.50
Mandrake Root, bags	lb.	.10	.11
Marjoram, Herb			
French, No. 1 bales	lb.	.18	.18½
German, bales	lb.	.16	.17
Mastic Gum, 120 lb cans	lb.	.65	.70
Matico Leaves, bales	lb.	.18	.21
Mezereon Bark, bags	lb.	.15	.16
Millet Seed, Yellow, bags	lb.	.02½	.03
Montan Wax, Crude, bags	lb.	.06½	.07
Bleached, bags	lb.	.25	.28
Moss, Iceland, bales	lb.	.10	.12
Irish, Bleached, bales	lb.	.11½	.14½
Mullein Flowers, tins	lb.	.85	.87
Leaves, bales	lb.	.07½	.08
Musk Root, Russian, bags	lb.	.07½	.08½
Myrrh Gum, 200 lb, cases	lb.	.18	.20
Nutgalls, Chinese, bags	lb.	.22	...
Aleppy, bags	lb.	...	Nom.
Powdered, bags	lb.	.23	...
Nutmegs, 110's cases	lb.	.16	.16½
75's & 80's cases	lb.	.19	.20
Grinding, bags	lb	.19	.20
NUX-VOMICA Buttons, bag	lb.	.05	.06
Powdered, 200 lb bbls	lb.	.08	.09
Oak Bark, bags	lb.	.06	.06½
Olibanum Gum, 280 lb cases	lb.	.10	.11½
Siftings	lb.	.25	.26
Tears, No. 1 Extra	lb.	.17	.19
No. 2	lb.	.14	.16
No. 3	lb.	12.00	13.00
Opium Gum, USP, cases	lb.	13.00	14.00
Granular, cans	lb.	13.00	14.00
Powdered, USP, cans	lb.	.30	.35
Orange Flowers, cases	lb.	.08	.09
Peel, Bitter, bags	lb.	.08	.09
Sweet bags,	lb.	.16	.17
ORRIS ROOT, Flor. bid. bags	lb.	.19	.21
Powdered, 200 lb bbls	lb.	.13	.14
Verona, bags	lb.	.18	.19
Powdered, 200 lb bbls	lb.	.95	1.00
Fingers, boxes	lb.	...	...
Ozokerite Wax, Brown, Hard	lb.	.24	.25
Bags	lb.	.30	.31
Green, Hard, bags	lb.	.37	...
Yellow, Refined, bags	lb.	2.25	2.30
Papain, Crude, 150 lb cases	lb.	2.45	2.50
Pure, Powdered, 10 lb bot	lb.	.20½	.20½
Paprika, bags	lb.	.13	.14
Pareira Brava Root, bags	lb.	.05	.06
Passion Flower, bales	lb	.18	.19
Patchouli Leaves, bales	lb.		
Pennyroyal, Herb, 100 lb bags	lb.	.07	...
Leaves, 100 lb bags	lb.	.20	.21

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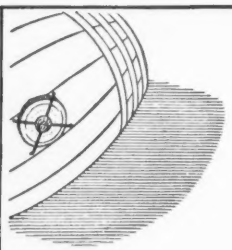

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Thymol, Howards'	Glycerine, B. P.
Bicarbonate Potash	Manganese Sulphate
Barium Nitrate	

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PEPPERMINT LEAVES, Imp bales lb.	.55	.65
Domestic, bales lb.	.28	.29
Pichi Leaves, bags lb	.11	.12
Pimento Select, bags lb.	.07¾	.08
Pink Root, True, bags lb.	.42	.44
Pleurisy Root, bags lb.	.17	.18
Poke Berries, bags lb.	...	.18
Root, 200 lb bales lb.	.07	.07½
Pomegrant Bark of Root, bags lb.	.30	.35
Bark of Fruit, bags lb.	.25	.30
Bark of Tree, bags lb.	.18	.22
POPPY FLOWERS, Red, bags lb.	.45	.50
Prickly Ash Bark lb.	.14	.17
Southern bags lb.	.11	.11½
Northern, bags lb.	.15	.16
Berries, bags lb.	.21	.22
Prince's Pine, bales lb.	.18	.23
Psyllium Seed, Black, bags lb.	.70	.75
Plantago Seed, Blonde, Bags lb.	.12	.13
Pulsatilla, Herb, bags lb.	.10	.11
Pumpkin Seed, bags lb.	.12	.13
Pyrethrum Flowers lb.	.15	.16
Pwd., pure, 200 lb.bbls. lb.	.22	.23
Quassia Chips, bags lb.	.06½	...
Quebracho, bulk, 125 lb. bbl. lb.	.25	.26
Quince Seed, bags lb.	1.50	1.60
Persian, bags lb	1.95	2.00
Rape Seed, South American, bags lb.	.05½	.06
Dutch, bags lb.	.06	.06½
Raspberries, Dried, bbls. lb.	.80	.85
Red Saunders, bags lb.	.08	...
Rhatany Root, bags lb.	.10	.11
Rhubarb Root, HD, cases lb.	.16	.18
Powdered, bbls lb	.21	.23
Rosemary Leaves, bales lb.	.05	.05½
Flowers, cases, bales lb.	.25	.30
Rose Petals, pale lb.	.20	.21½
Red lb.	.70	.75
Rue, Herb, bales lb.	.18	.20
Sabadilla Seed, bags lb.	.21	.22
Powdered, bbls lb.	.26	.27
SAFFRON FLOWERS, American, bales lb.	.24	.25
Valencia, 1 lb cans lb.	11.00	11.25
Sage Dalmatian, bales lb.	.05¼	.06
Sandarac Gum, 300 lb bbls. lb.	.33	.38
Sarsaparilla Root, Honduras, bales lb.	.45	.46
Mexican, bales lb.	.18	.20
Sassafras Bark, Ordinary, bales lb.	.10	.12
Select, bales lb.	.17	.19
Savory Leaves, bale lb.	.07½	.08
Saw Palmetto Berries, bags lb.	.07½	.08½
Scammony Resin, boxes lb.	1.30	1.35
Root, bags lb.	.08½	...
Senega Root, bags lb.	.65	.70
SENNA ALEX., 150 lb cases lb.	.25	.30
Half leaf 150 lb cases lb.	.12½	.14½
Sifting, 400 lb bales lb.	.11	.11½
Tinnevelly, Bold, 350 lb bales lb.	.16	.18
Medium Leaf lb.	.10	.11
Small Leaf lb.	.07	.09
Pods, 350 lb lb.	.24	.25
Powdered, 200 lb lb.	...	.10
Serpentaria Root, bags lb.	.42	.45
Simaruba Bark, bales lb.	.25	.27
Skullcap Leaves, Eastern, bales lb.	.40	.45
Western, bales lb.	.20	.30
Skunk Cabbage, Striped, bales lb.	.12	.14
Snake Root, Canada Natural, bags lb.	.26	.27
Canada, Stripped, bags lb.	...	.50
Soap Bark lb.	.12	.13
Cut, 125-175 lb bags lb.	.08½	.09
Crushed, 200 lb bbls lb.	.16	...
Powdered, bbls lb.	.12	.13
Spearmint Leaves, American, bales lb.	.25	.26
Spermaceti, blocks, cakes, cases lb.	.32	.35
Spikenard Root, bags lb.	.13	.13½
Squaw Vine, bales lb.	.14	.15
Squills, White lb.	.05	.06
Powdered, bulk lb.	.23	.25
Stavesacre Seed, bags lb.	.14	.15
Stillingia Root, bags lb.	.08	.09
Stone Root, bags lb.	.08	.09
St. Ignatius Beans, bags lb.	...	.55
St. John's Bread, bags lb.	...	.09
STRAMONIUM LEAVES, bales lb.	.12	.14
Seed, bags lb.	.07½	...
Strophanthus Seed, Kombe, bags lb.	2.00	2.25
Styrax Liquid, Artificial lb.	.26	.35
Genuine, USP lb.	.38	.43
Sunflower Seed, bags Calif. lb.	.04½	.05
South American, bags lb.	.07	.07½
Tamarinds, bbls lb.	.07	.08
Kegs keg	3.85	...
Tansy, Herb, bales lb.	.14	.15
Thus Gum, 280 lb bbls lb.	.08	.17
THYME, Spanish, bales lb.	.08	.08½
French, bales lb.	.07	.07½
Tonga Root, bundles lb.	.25	.26
Bark, bundles lb.	.25	.26
Tonka Beans, Angostura Cases	1.75	1.85
Para cases lb.	.90	...
Surinam cases lb.	1.00	1.10
Tragacanth Gum, No 1, 100 lb. cases lb.	1.40	1.45
No. 2 lb.	1.25	1.35
No. 3 lb.	1.10	1.20
Powdered, 50 lb boxes lb.	.85	.95
Turkish cases lb.	.50	.90
Turmeric Root Madras, bags lb.	.07¾	.08½
Aleppy bags lb.	.07	.07½
Powdered lb.	.13	.15
China bags lb.	.11	.12
Turpentine Venice True, 80 lb cases lb.	.32	.40
Artificial, 80 lb cases lb.	.17	.18
Uva Ursi Leaves, bales lb.	.05	.05½
Valerian Root, Belgium bags lb	.12	.14
VANILLA BEANS, Mexican, whole, cases lb.	4.00	4.50
Cuts, cases lb.	2.50	2.65
Bourbon, cases lb.	1.10	1.60
Vetivert Root, 100 lb bags lb.	.25	...
Violet Flowers, bags lb.	.85	.90
Wahoo Bark of Root, bags lb.	.42	.45
Bark of Tree, bags lb.	.20	.21
White Pine Bark, Roseed, bags lb.	.06	.08
White Poplar Bark, bags lb.	.06	.07½
Wild Cherry Bark, Natural thin, Green lb.	.09	.10
Rossed bales lb.	.11	.12
Thick Rossed, bales lb.	.08	...
Wild Indigo Root, bags lb.	.13	.14
Willow Bark, bags lb.	.05	.05½
White, bags lb.	.15	...
Witch Hazel Bark, bags lb.	.05	.06
Leaves, bales lb.	.07	.08
Wormseed, American, bags lb.	...	.08
Wormwood, Herb, Imp., bales lb.	.08	.08¼
Yellow Dock Root, bags lb.	.08	.09
Yerba Mate, bags lb.	.22	.25
Santa, bags lb.	.09	.10½

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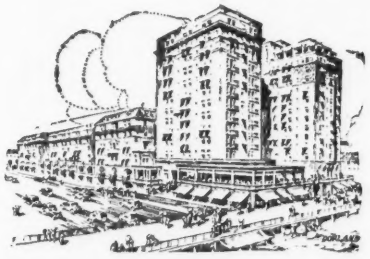

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Index to Advertisers

Abbott Laboratories, No. Chicago, Ill. 502
Alsop Engineering Co., New York ..... Cover 2
American Potash & Chemical Corp., New York 506
Anchor Cap & Closure Corp., Long Island City, N. Y. 425
Armstrong Cork Co., Lancaster, Pa. 423
Art Tube Co., Irvington, N. J. 486

Bakelite Corp., New York ..... Insert between 424, 425
Baker & Bro., H. J., New York 516
Bond Manufacturing Corp. Wilmington, Del. 482
Bush & Co., Inc., W. J. New York 502

California Fruit Growers Exchange, Ontario, Cal. 512
Coignet Gelatines, New York 506
Colgate-Palmolive-Peet Co., Chicago, Ill. 500
Colton Co., Arthur, Detroit, Mich. 484
Consolidated Products Co., New York 518
Crown Cork & Seal Co., Baltimore, Md. 424

Dodge & Olcott Co., New York 419
Dow Chemical Co., Midland, Mich. ..... Insert facing 465
Dreyer Inc., P. R., New York 500, 516

Franco-American Chemical Works, New York 476
Fritzsche Brothers, Inc., New York 470

General Felt Products, Inc., Brooklyn, N. Y. 422
Givaudan-Delawanna, Inc., New York 474
Greeff & Co., Inc., R. W., New York 510
Gutmann, Ferdinand & Co., Brooklyn, N. Y. 482

Hamilton, A. K., New York 476
Harshaw Chemical Co., Cleveland, O. 506
Heyden Chemical Corp., New York 490
Hoffmann-LaRoche, Inc., Nutley, N. J. 492
Hopkins & Co., J. L., New York 506
Huisking, Geo. P., New York 507

Industrial Chemical Sales Co., Inc., NewYork. Insert bet. 488, 489

Kiefer Machine Co., Karl, Cincinnati 484
Kranich Soap Co., Inc., Brooklyn, N. Y. 501

Leonhard Wax Co., Inc., Theodor, Paterson, N. J. 504

Magnus, Mabee & Reynard, Inc., New York 421
Mallinckrodt Chemical Works, St. Louis 430
Maryland Glass Corp., Baltimore, Md. ..... Insert facing 456
Merck & Co., Inc., Rahway, N. J. ..... Insert facing 489
Mixing Equipment Co., Inc., Rochester, N. Y. 482
Monsanto Chemical Works, St. Louis ..... Insert facing 425

National Adhesives Corp., New York 487
New England Collapsible Tube Co., New York 429
Newport Chemical Works, Inc., Passaic, N. J. 472
N. Y. Quinine & Chemical Works, Brooklyn, N. Y. 508
Norwegian Cod Liver Oil Ass'n, Norway 516

O & J Labeling Machine Co., Worcester, Mass. 480
Owens-Illinois Glass Co., Toledo, Ohio 426

Pacific Coast Borax Co., New York 517
Package Machinery Co., Springfield, Mass. 485
Parsons, M. W., New York 507
Penick & Co., S. B., New York 517
Pennsylvania Sugar Co., New York 476
Pfizer & Co., Chas., Inc., New York ..... Insert facing 424
Phoenix Hermetic Co., Chicago, Ill. 427
Plaimar, Ltd., Perth, Western Australia 512
Powell & Co., Inc., John, New York 504

Schering Corp., New York 502
Schliemann Companies, Inc., New York 510
Spring Stopper Co., New York ..... Insert facing 464
Stanco Distributors, Inc., New York 501
Stokes Machine Co., F. J., Philadelphia 478
Stokes & Smith Co., Philadelphia, Pa. 487
Sturge, John & E., Birmingham, England ..... Cover 4
Sun Tube Corp., Hillside, N. J. ..... Cover 1
Swann Corp., Birmingham, Ala. 428

Todd Co., A. M., Kalamazoo, Mich. 500

Ungerer & Co., New York 498
U. S. Industrial Alcohol Co., New York 494

van Ameringen-Haebler, Inc., New York ..... Inserts bet. 464, 465

White Metal Mfg. Co., Hoboken, N. J. 417
Will & Baumer Candle Co., Inc., Syracuse, N. Y. 504
Wilson Laboratories, Chicago, Ill. 506
Wirz, Inc., A. H., Chester, Pa. ..... Insert between 424, 425